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Senate Completes Work on Paper Schedule

Schedule Is Finished Except That When Complete Bill Has Been Gone Through For Finance Committee Amendments Floor Amendments Will Be In Order—It Is Not Expected However That There Will Be Many, If Any, Changes in Paper Schedule Due To Floor Amendments—Changes Adopted

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 22, 1930.—The Senate has completed its work on the paper schedule except for the fact that when the whole bill has been gone through for Finance Committee amendments so-called "floor" amendments will be in order. It is not expected that there will be many, if any changes, in the paper schedule due to the floor amendments.

Senator Walsh of Massachusetts handled the paper schedule on the floor on behalf of the minority party. At the beginning of the discussion on the paper schedule Senator Walsh had inserted into the record the changes in the present law as made by the House and those as suggested by the Senate Finance Committee as follows:

RATE CHANGES IN PAPER SCHEDULE

List of major increases made by the House and concurred in by the Finance Committee:

PARAGRAPH 1402

Specific provision for "pulpboard in rolls for use in the manufacture of wallboard" at 5 per cent ad valorem omitted; such pulpboard therefore becomes dutiable at 10 per cent ad valorem if non-processed or at 30 per cent ad valorem (par 1413) if processed.

PARAGRAPH 1404

Rate on tissue papers weighing less than 6 pounds per ream increased from 6 cents per pound and 15 per cent ad valorem to 6 cents per pound and 20 per cent ad valoren.

PARAGRAPH 1405

Rate on decorated uncoated papers increased from 4½ cents per pound to 4½ cents per pound and 10 per cent ad valorem. Same paper if embossed, partly covered with metal, rate increased from 4½ cents per pound and 17 per cent ad valorem to 4½ cents per pound and 20 per cent ad valorem. Same paper when metal covered and weighing less than 15 pounds per ream, rate of 5 cents per pound and 17 per cent ad valorem increased to 5 cents per pound and 18 per cent ad valorem.

Rate increased on simplex decalcomania paper, not printed, from 5 cents per pound to 5 cents per pound and 10 per cent ad valorem.

PARAGRAPH 1406

Transparencies specially provided for and rate increased from 25 cents per pound to 40 per cent ad valorem when in not more than five printings. and to 50 per cent ad valorem when in more than five printings.

PARAGRAPH 1407

Papeteries specially provided for and rates giving an equivalent ad valorem of approximately 32 per cent increased to 40 per cent ad valorem.

List of major increases made by the House and decreased by the Finance Committee:

PARAGRAPH 1406

Decreased House rate on stripped ceramic decalcomanias from $1.40 per pound and 15 per cent ad valorem to $1.25 per pound and 15 per cent ad valorem.

Also decreased compensatory rate of House on unstripped ceramic decalcomanias from 35 cents per pound and 15 per cent ad valorem to 30 cents per pound and 15 per cent ad valorem.

List of major increases made by the House and increased by the Finance Committee:

None.

List of major decreases made by the House and increased by the Finance Committee:

PARAGRAPH 1405

Unsensitized blue and brown print paper rate of 20 per cent ad valorem increased to 1922 rate of 3 cents per pound and 15 per cent ad valorem.

Sensitized blue and brown print paper rate of 25 per cent ad valorem increased to 1922 rate of 3 cents oer pound and 20 per cent ad valorem.

Unsensitized photographic paper rate of 5 per cent ad valorem increased to 1922 rate of 3 cents per pound and 15 per cent ad valorem.

Sensitized photographic paper rate of 30 per cent ad valorem increased to 1922 rate of 3 cents per pound and 20 per cent ad valorem.

The Senate adopted the suggested changes of the Finance Committee in paragraph 1404, that is the tissue paper paragraph. In this paragraph the Committee had inserted in one place "white or printed" and in another place twenty and one half pounds to the ream as compared with 18 pounds as provided for in the bill as it passed the House. The Senate Committee also inserted in this same paragraph "and paper wadding, and pulp wadding, and manufactures of such wadding." All of these changes were accepted by the Senate.

All of the changes suggested by the Finance Committee in paragraph 1406 on pictures, calendars, etc. were adopted by the Senate.

Suggested changes in paragraph 1408 on paper envelopes were also accepted by the Senate so that as it passed it now reads:

"Par. 1408. Paper envelopes, filled or unfilled, whether the contents are dutiable or free, not specially provided for shall be subject to the same rate of duty as the paper from which made in addition thereto, if plain, 5 per centum ad valorem; if bordered, embossed, printed, tinted, decorated, or lined, 10 per centum ad valorem; if lithographed, 30 per centum ad valorem; Provided; That paper envelopes which contain merchandise subject to an ad valorem rate of duty or a duty based on whole or in part upon the value thereof shall be dutiable at the rate applicable to their contents but not less than the rates provided for herein."

Paragraph 1409 as it finally passed the Senate now reads: "Par. 1409. Jacquard designs or ruled paper, or cut on Jacquard cards, and parts of such designs, 35 per centum ad valorem; hanging paper, not printed, lithographed, dyed, or colored, 10 per centum ad valorem; printed, lithographed, dyed or colored, 1½ cents per pound and 20 per centum, ad valorem; wrapping paper not specially provided for, 30 per centum ad valorem; filtering paper, 5 cents per pound and 15 per centum ad valorem; paper commonly and commercially known as cover paper, plain, uncoated, and undecorated, 20 per centum ad valorem; paper not specially provided for, 30 per centum ad valorem."

The amendment offered by Senator Walsh of Massachusetts which provided for the restoration of the present rate of 5 per cent on pulp board in rolls for the use in the manufacture of wall board was adopted. The House had stricken this provision from the bill which left all pulp board dutiable at 10 per cent and the Senate Finance Committee had left the provision that way. This pulp board amendment was made by the insertion in that para-

(*Continued on page 72*)

Paper Mill Activities in Fox River Valley

Union Bag & Paper Co.'s Kaukauna Plant to Resume Operations January 27—Financial Report Shows Kimberly-Clark Corp. Enjoyed Highly Successful Year—Earnings for 1929 Amounted to $6 a Share—Nekoosa-Edwards Also Made Good Showing

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 20, 1930.—After a shutdown for six months, the Union Bag and Paper Company's mill at Kaukauna, Wis., will go back into operation on January 27, according to announcement of R. A. Jacoby, resident manager. This is a two machine mill, but for the present only one machine will be operated. Employment will thus be furnished forty or forty-five of the eighty-odd men who were thrown out of work when the shutdown occurred. Last spring the company moved its bag department to Orange, Texas, but kept the paper mill running for a time and then announced a suspension of operations about July 1.

Kimberly-Clark Earnings

Net earnings of the Kimberly-Clark Corporation, Neenah, Wis., for the year ended December 31, 1929, were more than $3,600,000, after charges and taxes were allowed, according to a preliminary financial report issued by the company. After allowing for preferred dividends, this amounts to over $6.00 a share on 499,800 shares of common stock outstanding.

This is considered an exceptionally good showing and bespeaks a highly successful year, since the net earnings in 1928 were $2,754,663, or $4.39 a share on 490,000 shares of common stock outstanding.

Fourth quarter earnings were equal to $1.80 a share after preferred dividends, compared with 1928 fourth quarter earnings of $1.62. The outlook for business for 1930 is quite satisfactory, states F. J. Sensenbrenner, president.

Nekoosa-Edwards Officers Re-elected

There were no changes in the official personnel of the Nekoosa-Edwards Paper Company, of Nekoosa, Wis., as the result of the annual meeting last week. The directors and officers were re-elected, and are as follows: L. M. Alexander, president; J. E. Alexander, first vice president; Judson G. Rosebush, second vice president, and C. A. Jasperson, secretary. Other directors are: J. W. Kibby, L. M. Hanks, F. J. Wood, Buy O. Babcock and J. B. Nash. The annual report read by Mr. Jasperson showed the company to be in excellent condition, and the business very satisfactory during 1929.

Paper Mills to Observe Rest Law

All paper mills in Wisconsin hereafter will be obliged to adhere to the state one-day-of-rest-in-seven law, it was announced at the concluding session last week of the conference of paper mill executives and the Wisconsin Industrial Commission. Much was accomplished at this gathering in solving some of the problems still existing among mills. When it was shown that most of the mills, especially the larger ones, had found methods of carrying out the law to the letter with modifications set forth by the commission, the remaining mills were told that they also must comply. A system used by the Thilmany Pulp and Paper Company, Kaukauna, Wis., was explained by W. F. Ashe, personnel director. This mill operates seven days a week but manages to give its employees one full day of rest in seven.

It has been ruled by the commission that mills may operate on the seventh day in emergencies, but there was considerable discussion over what might be called an emergency. This matter was referred back to the advisory committee, made up of commission members, mill executives and labor representatives. An attempt will be made to define what will be considered an emergency under this ruling. Large placards will be printed by the commission for posting in mills to inform employees that the mill is obliged to enforce the law. Much praise was given the mill owners by Fred M. Wilcox, chairman, and R. G. Knutson, commissioner of the industrial commission, for the manner in which they co-operated to put the law into effect.

News of the Industry

Grode & Nash Paper Company, general paper merchants, of Nekoosa, Wis., declared a six per cent dividend for 1929, according to the reports submitted at the company's annual meeting last week. The volume of business transacted during the last year was very satisfactory. Officers and directors were re-elected as follows: F. X. Grode, president; J. P. Nash, secretary and treasurer; C. E. Trelevan, vice president; Martin Brandt, Frank McGarigle and Louis Whipfli, directors.

The Dells Paper and Pulp Company, Eau Claire, Wis., is cutting 20,000,000 feet of pulp wood this winter in Sawyer County, Wisconsin, representing part of the harvest of 125,000,000 feet of timber in that county by both paper and lumber companies. The Northern Pulp Wood Company is cutting the stumpage from swamps of the Hines Lumber Company land after the logs are removed and will ship out about 50,000 cords of pulp wood. About sixty per cent of the cut is hemlock.

Eight meetings are planned for the fourth annual safety school opening this week at Green Bay, Wis. At the first meeting the speaker will be Ernest Corn, of the National Safety Council, Chicago, subject, "Are We Fit for Our Jobs?" Other speakers booked are: Samuel H. Reid, Bureau of Safety, Inc., Chicago, subject, "Industrial Safety"; Judge Matthew McCarthy, Rumford, Maine; Garrett Burgess, consulting engineer, Detroit, Mich; Dr. R. H. Little, state director of rehabilitation, New York; T. Alfred Fleming, of the National Board of Fire Underwriters; H. V. Porter, Milwaukee, and W. R. Bennett, Chicago. Among the paper mill officials who will assist at the sessions are P. J. Timmerman, mill manager, Northern Paper Mills, and Frank Vaughn, manager of the Bay West Paper Company.

Injuries suffered by Boyd W. Frakes, employed on construction work at the new unit of the Marathon Paper Mills Company's carton plant at Menasha, Wis., proved fatal. He fell 25 feet, suffering a skull fracture and crushed chest. He was employed by the Dowd Concrete Company, one of the firms erecting the new building.

A hearing was held in the hospital at Neenah, Wis., on a claim for compensation of Joseph Mucha, who was employed a year ago at the Lakeview Paper Company, Neenah, then owned by Sears, Roebuck & Co. The man suffered injuries to his back when a load of frozen earth which he was hauling fell upon him, and he alleges the injuries have left him partially paralyzed and suffering. The Wisconsin Industrial Commission examiners and attorneys for the company heard his testimony and that of witnesses.

Unity Paper Co. Case Postponed

[FROM OUR REGULAR CORRESPONDENT]

UTICA, N. Y., January 20, 1930.—The adjudication of the Unity Paper Company, of Potsdam, in bankruptcy has been postponed until February 4. When the proceedings were begun in December the day for declaring the firm bankrupt was set aside until January 4, this being done to afford opportunity to make a settlement with creditors. A further postponement has now been made by order of Federal Judge Bryant.

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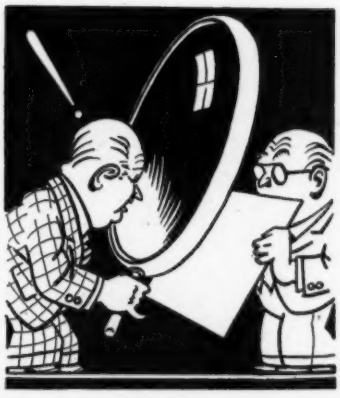

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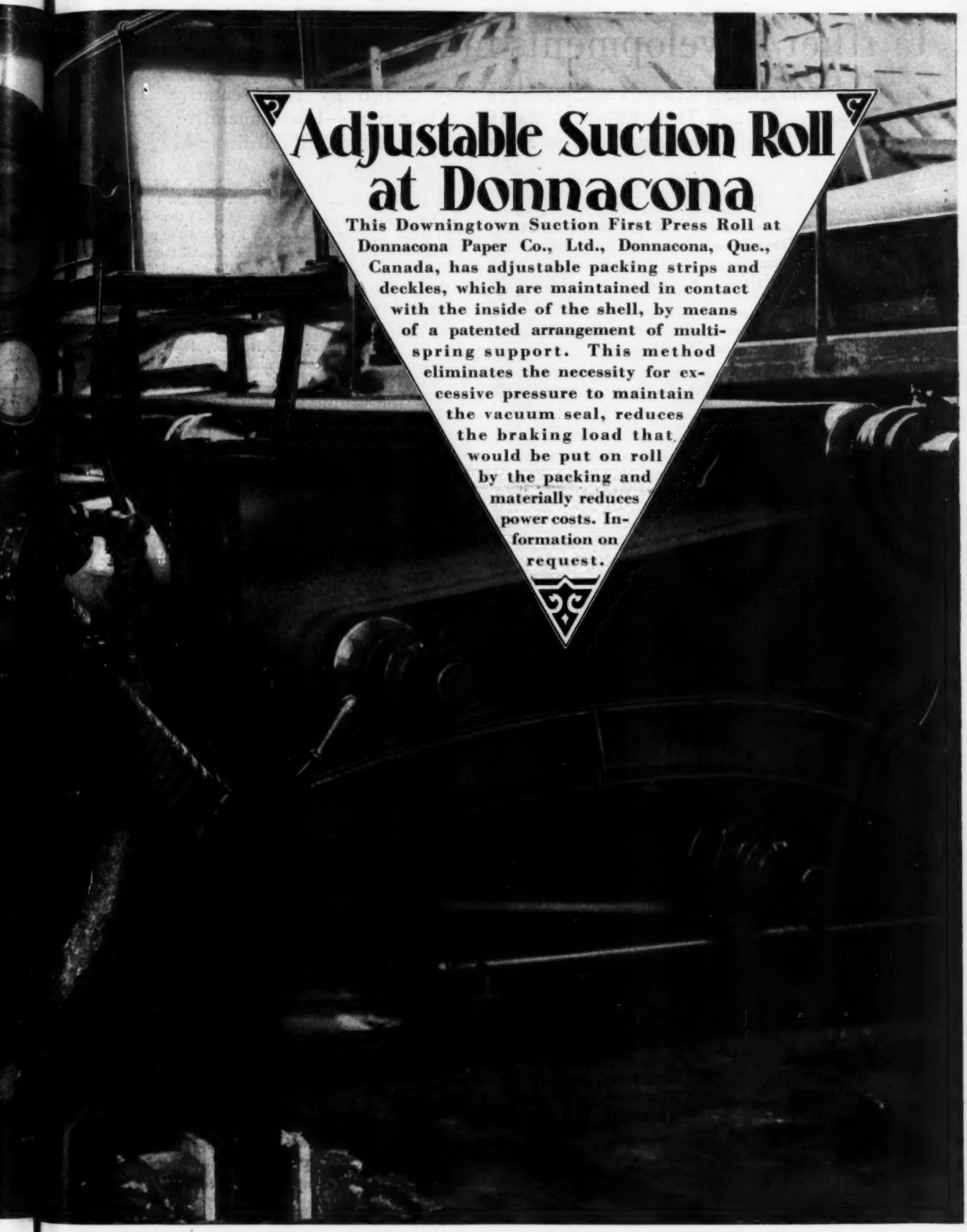
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Further Developments in News Print Situation

Canadian Manufacturers Cannot Understand Hostility Shown by Representative American Newspapers Towards Their Efforts to Stabilize Quotations—Unremunerative Prices May Ultimately Result to Serious Disadvantage of Publishers

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 20, 1930.—Canadian news print manufacturers cannot understand why, in the face of conditions in the news print industry, as they must be known to all representative newspaper publishers, there should be such a feeling of apparent hostility towards Canadian interests as a result of the endeavors which are being made to stabilize the price at $60 per ton. The present, it is true, is a buyers' market, but if, as is possible, unremunerative prices force weaker producers to the wall and close up some of the mills, conditions may be reversed to the ultimate serious disadvantage of the publishers.

Plans to Develop Scandinavian Sources

Meanwhile, the reported plans of the American Newspaper Publishers' Association to develop Scandinavian sources of news print, to which much prominence is given in the January 11 issue of *Editor and Publisher*, are causing no apprehension to news print manufacturers here. They are just as familiar with the industrial situation in the Scandinavian countries as they are with conditions here. Scarcely a year passes but special representatives of the pulp and paper industry go to these countries to study conditions, and G. C. Piche, the chief of the Forest Service of the Quebec Government, pays periodical visits to Scandinavia, and as a government official has every opportunity to inquire into the situation very thoroughly.

Threatened Competition Causes No Misgiving

Being acquainted, therefore, with every phase of the industry in Scandinavia, pulp and paper producers here are of the opinion that possible competition from this source offers very litte ground for misgiving. In Sweden, Norway and Finland, according to information here, the governments have set restrictions on the cutting of wood, and have actually applied rules which do not permit the cutting of more than the annual increment. All three countries are now cutting up to their practical limit, and there is no possibility in any of them of a further surplus of paper being produced.

News Print Consumption Increasing Abroad

Furthermore, the consumption of news print, both in continental Europe and in the United Kingdom, is increasing at a much faster ratio at present than at any period in the past, and it is conceivable that it will be but a short time before Europe will have no surplus to export. At the present time the maximum possible production for export to the United States would not amount to a quarter of a million tons per annum, which represents about 5 per cent of the American consumption.

Another point that carries weight here is the knowledge that the European producer of paper is no more willing to sell his product at unprofitable prices than any one else, and should the demand for his product increase it would simply mean a rise in price.

Law of Supply and Demand

The situation here, meanwhile, is simply working out according to the old law of supply and demand, and unbiased observers believe that the producers cannot set aside the logical working of that law, no matter what the Provincial governments may do or say. When there is a surplus of products it naturally follows that there is a scramble to get that surplus into the market, with the inevitable sequence that prices are cut.

When there was a scarcity of paper in 1919-20, and prices went to the unheard of level of $140 a ton for spot paper, all the influence of the American publishers was brought to bear to keep prices down. The American government and the Canadian government and everybody else, conspired to keep the price from the level to which natural conditions forced it. All their efforts were unavailing. Now the shoe is on the other foot. There is more paper than the market can take care of. The price has gone down, and when an attempt is made to lift it by artificial means under such circumstances, that attempt fails.

All Producers Not Loyal

Some months ago your correspondent stated that despite round-table agreements among the producers, these producers were not all loyal to each other, but were actively canvassing each other's customers for business. This statement was denied at the time, yet is was true, and the practice has not been discontinued. Actually some of those who have been sitting around a table and agreeing to do certain things, have deliberately gone out and stolen customers away from their associates in the agreement.

The situation even now is most uncertain. How it will end nobody can tell. But this is certain—unless there is quite soon an abatement of the fierce competition that underlies an apparently fairly smooth surface, the publishers will be the ultimate losers.

Serious Nature of Forces Arising

Premier Taschereau's statement, delivered in the Legislature at Quebec, and given below, indicates something of the serious nature of the forces that are arising. Meanwhile your correspondent is able to reveal one of the chief sources of the anxiety of the government of Quebec and Ontario which has not hitherto been brought to the surface.

It is well known that the prices which have been prevailing have resulted in serious financial embarrassment for many companies. This embarassment has reached such a point that some of the companies are already having difficulty in meeting their obligations to the governments for stumpage dues. These dues are an important source of revenue to the governments concerned, and the fact that they are threatened with the non-payment of considerable portions of them is one of the main reasons why the premiers of the two Provinces have identified themselves so actively with the negotiations for an increase in the price of news print.

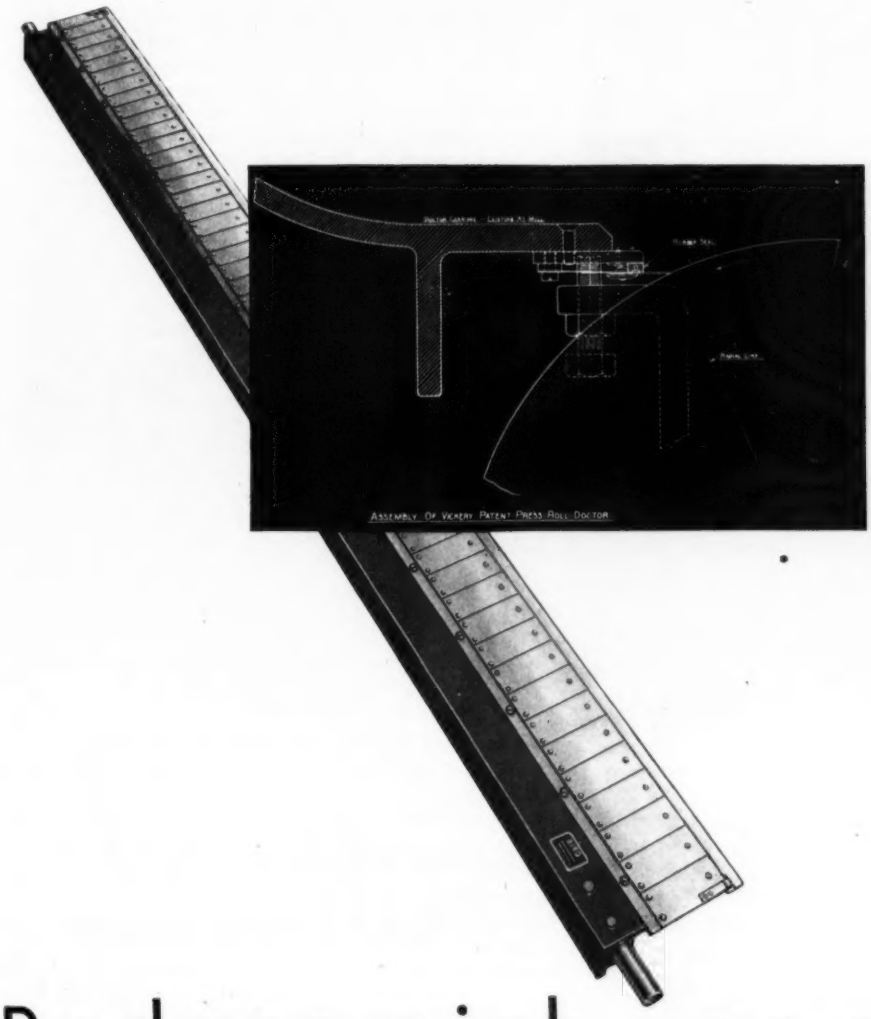
Timber Cutting May be Curtailed

Should companies default in their payments on any considerable scale, cutting will immediately be curtailed in a drastic manner, for no government would be allowed to stay in office for a moment if it were shown that they were actually giving away the forests which belong to the people.

Practically all the forests in Quebec and Ontario are Crown lands, that is, they belong to the public. For instance, in Quebec the forest domain consists of 120,000,000 acres and all this with the exception of 6,368,800 acres in private ownership, belongs to the Crown. These figures do not include the Crown lands in Quebec, Labrador, and New Quebec. It will be seen, therefore, how vital is the responsibility of the respective governments for the profitable exploitation of the property of the people.

Premier Taschereau Issues Significant Threat

Speaking in the Quebec Legislature last Tuesday, Premier Taschereau made a considered statement which could not be construed



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otherwise than as a threat to the International Paper Company. He hinted that stumpage dues might be charged on the discretion of the government, that such dues should be doubled or trebled, and that such increase need not apply to all companies. He specifically singled out the International Paper Company for mention in this connection. He also issued a warning to newspaper publishers as to possible excessive prices if small independent mills were forced out of business. His statement was as follows:

Warning To Publishers

"The rapid development of our news print mills brought about over-production which, in virtue of the inexorable law of supply and demand, brought down the price of paper. In the course of the autumn of 1928 the price fell below $50, whereas during the war the price was $140 a ton, and even at this price the manufacturers waged war to the death against each other. Our adversaries wish to hold the Government responsible for this state of things. Do not forget that for three years we have sold no forestry concessions.

"I do not wish to throw blame upon anyone, but the manufacturers of paper have perhaps opened the door of their industries too wide to bankers and brokers, bringing as a consequence inflation and speculation. Be that is it may, at the end of 1928, thanks to the intervention of the Governments of Quebec and Ontario the price of paper was stabilized for a year at $55, an increase of $5 a ton. The year has just closed.

"The Canadian manufacturers are unanimous in saying that $55 is not a sufficiently high price, and that the price should be raised to $60. Naturally the newspaper proprietors oppose an increase, which is their right, but after having studied the question with care and informing myself from the best authorities, I have no hesitation in saying that $55 is too low a price. It is far from our idea to wish to fix the price of paper by a law.

"The thing is not possible, but as more than 80 per cent of the paper manufactured in the province is made from wood coming from Crown lands, I believe that we have the imperative duty of seeing that our forests are not denuded without profit for our people.

"I know of companies which are unable to pay their dividends today if paper is sold at $55 a ton, and yet the savings of our people are invested in these companies. The limit-holders of our forests are held today to protect them against fire, insects and other enemies; they seek also to do reforestry work. How can it be expected that these holders can thus protect the forests and perpetuate it if the margin of profit is so small that it is only with gerat difficulty that the fixed charges can be met?

"The harm comes, I may say, from an untimely contract made by the International Paper company with the Hearst interests, a contract for five years at $55. It is this contract, which it seems impossible to get rid of, that is the cause of the trouble, for it fixes a price in the United States which all wish to obtain. I said an untimely contract but it is an imprudent one as well, if we wish to give a character of performance to our forestry concessions. On the other hand, the stumpage duties are left entirely to our discretion, and may be doubled or tripled tomorrow according to the terms of the licenses themselves and the increase is not necessarily uniform for all. Many circumstances may influence our decision on that subject.

"I will admit frankly that I do not understand how a company could engage itself for five consecutive years to sell its paper at a fixed price when it does know how much its raw material is to cost, and that it may have to count on the ill-will of the Government which has furnished it and which holds it responsible for the troubles encountered by the industry.

"Let it be well noted that there is no combine among our manufacturers, nor any intention on their part to control the market. They want only a reasonable price for their paper. Shall I add that during the war, when the price of paper was $140, the proprietors of newspapers doubled the price of their papers; when the price fell to $55 I do not believe these gentlemen reduced their subscription prices in consequence. May I add also, if my information is exact, that if the price of paper is raised to $60, our people, our workmen included, will receive around $16,000,000 more. So, as the advertisements in the United States bring around $800,000,000, the newspapers will have only to increase their rates 2 per cent, which is insignificant in view, above all, of the peace and stability which will result.

"The newspaper proprietors should not forget that the ruin of the small independent mills will inevitably create trusts at whose mercy they will be, and, as with copper, the price will become excessive. If that is the hope of certain companies they may rest assured that they will meet the Government of Ontario and Quebec in their path, these two Governments being fully in accord in their policy on this subject. I make appeal to fair play and the business sense of our neighbors to the south to make prosperous and conserve this fine forestry industry, the second industry of Canada, in the future of which they are vitally interested as principal consumers.

"Men of fertile imagination but with whom the sense of truth fades before political necessities have cried out loudly that I went on my knees before Mr. Graustein at New York. I said to the president of the International Paper Company what I have said to the House. If to the gentlemen referred to this is a prayer I can understand their disasters, the Almighty cannot be touched by their supplications, I will add finally that we owe nothing to the International, that it owes us nothing, we are therefore very free in our relations with the company."

Says Premier, Not Company, To Blame

Lord Atholstan's paper, the *Montreal Star,* takes issue with Premier Taschereau in regard to placing the blame for the situation which has developed in the news print industry. The Star says:

"Had the Premier faced this situation squarely and unflinchingly, he would have strengthened himself by admitting his own sins in issuing excessive licenses to manufacturers.

"Notwithtanding timely warnings, the Government deliberately brought into existence too many mills and by thus creating an unneeded capacity of production has crippled the great industry of the Province, undermining the solidity of $300,000,000 invested and destroying the claims of mill operatives to better wages and constant employment. It is not an unfair suggestion that the Premier possibly had twinges of conscience when he spoke of news print, because he must have called to mind the circumstances under which licenses were granted."

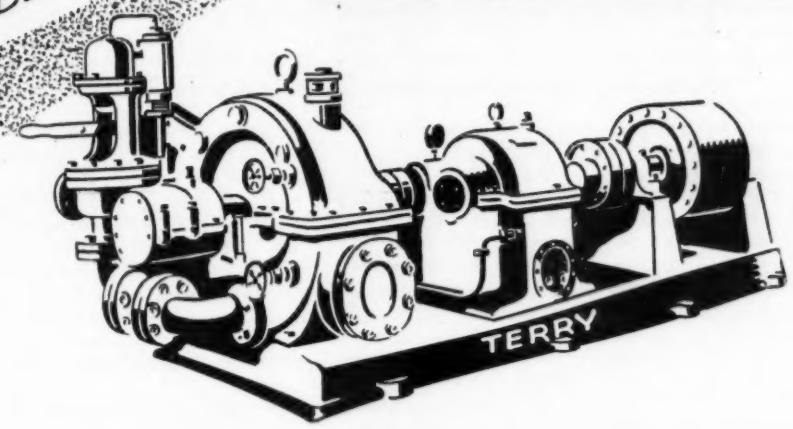
Open War Not Unlikely

That open war in the news print industry is not unlikely is the opinion expressed by the *Financial Times,* of Montreal. This paper in its current issue, says:

"The news print situation is full of complications. A dozen times, during the past year, the whole situation seemed to have been settled, but each time some development would occur to cause further complications. There has been an evident inclination on the part of different companies to throw over the traces, and in the opinion of people in touch with conditions it is going to be hard to get them to line up again without first of all bringing about certain readjustments in the industry itself.

"Back of it all is the feeling that some of the companies were the cause of the situation that forced prices down to the $50 level, and the other operators now object to following blindly a plan that will help the interests responsible for the low prices to share in a substantial advance. As the matter now stands, many of the inside interests figure that there is going to be a battle, and before the matter is finally settled it will be a case of the survival of the fittest. Such a battle, it is stated, is almost certain to occur before any final adjustment is made among all companies principally concerned."

Higher Paper Speeds—Greater Production



Secured by another N.Y. State Mill with the TERRY Paper Machine Drive

By making certain changes on his paper machine, this manufacturer found that he could increase the paper speed 60%. The prime mover, however, was not suitable for driving the machine at this speed, so a thorough investigation was made to determine what the market offered for the conditions, with the result that a Terry Paper Machine Drive was purchased—for it gave:

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Boston Paper Market Shows Favorable Trend

Concerted Effort to Create Demand for Higher Price Papers Gradually Bringing Results — Standard Grades of Fine Paper In Fairly Satisfactory Request—Competition For Kraft Paper Orders Intense—Box Board Conditions Improving

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 20, 1930. The favorable paper market which prevailed at the beginning of the year continues, with practically all, if not all, of the dealers securing at least a moderate volume of orders. Some of the expressions in regard to the situation are "pretty fair," "good," and "rushing." There are indications that there will be an increased amount of direct mail advertising in 1930, making for a demand for fine papers in fairly generous amounts. Then, too, the concerted effort of the paper industry, according to a member of the trade here, to create a demand for the higher-priced papers is gradually becoming felt. The effect is seen in the growing number of such lines which are specified by advertising agencies and others. "Laymen" are gradually becoming educated to the desirability of using certain lines for special purposes. When an advertiser places an order he specifies the kind of paper he wants, because he knows the differences between the various grades. This trend is naturally highly pleasing to paper houses, because it means an increasing call for standard lines. The tendency noted applies not only to papers used chiefly for advertising purposes, but also to writing and book papers as well as ledgers and bonds. The demand for kraft is good, although competition is, as ever, one of the big problems of the trade. A grade of fiber paper is being sold at a figure considerably below the market. The market, as a whole, is steady. Conditions in box board continue to improve, although there is no boom. Values remain unchanged.

The paper stock situation has not improved generally, but the trade expects that there will be signs of better conditions before long. Manufacturers are still busy with their inventories, and a member of the paper stock trade says that the "outline" of new business to be placed has not been completed. Values are the same.

The twine market is firm and flourishing. Putting the soft fiber twine on the market under the new schedule, according to Government regulations, appears to be working out satisfactorily. Under the new arrangement a customer must buy a minimum of 600 pounds in order to get the benefit of a lower price. The twine market shows a slight advance in some lines under the new schedule. Some soft fiber prison-made twine is being offered on the market now.

Paper Merchants Elect Officers

At the annual meeting of the New England Paper Merchants Association at the Harvard Club of Boston, Thursday evening the following officers for the ensuing year were chosen, all being re-elections except the members of the executive committee: President, Arthur E. Ham, of Arthur E. Ham & Sons; first vice president, Floyd E. Blackman, of D. F. Monroe Company; second vice president, William H. Rourke, of the Rourke, Eno Paper Company, Hartford, Conn.; secretary, Edward D. Bement, of Carter Rice & Co. Corp., treasurer, John F. Kuster, of the Andrews Paper Company, and auditor, W. H. Arnold, of the Providence Paper Company, Providence, R. I. Executive committee: (Fine Paper Division) W. N. Stetson, Jr., of Storrs & Bement Company, and Edwin Porter, of Cook-Vivian Company. (Wrapping Paper Division) Willard H. Loud, of Stimpson & Co., Inc., and W. H. Arnold. Matthew O. Byrne, of Whitney Bros., Inc., is chairman of the nominating committee. The delegates to the meeting of the National Association are Chas. A. Esty, of Carter Rice & Co. Corp., and M. O. Byrne. Two new members were elected: the L. B. Philbrick Company, Salem, Mass., and the Chatfield Paper Corporation, New Haven, Conn.

Charles H. Barr, of the Barr Associates, gave an inspiring talk on organization work, the possibilities of new business and other matters. All of the officers of the association spoke. The splendid cooperation and helpful advice which the president has received from the other officers is much appreciated by him. President Ham was in the chair and there were about sixty present.

News of the Trade

Toreador, a new line, manufactured by Linton Bros. & Co., Fitchburg, Mass., has been taken on by Carter Rice & Co. Corp. This paper is made in leather finished stock in white and ten brilliant colors, fawn, orange, blue, gray, green, salmon, buff, cherry, canary and red. Sample books containing several effective printing treatments, are being distributed.

Beginning January 15, Carter Rice & Co. Corp. is sending out at monthly intervals four mailing pieces prepared by the Oxford Paper Company, Rumford, Me., demonstrating Oxford dull coated. The first piece, entitled "Selling Printing to Architects," is very attractively printed in 4-color process. This campaign is supplementary to one in 1929, consisting of six pieces on Oxford folding coated, from which the returns were most gratifying.

Rutter & McNaught, Inc., have just issued their new price-list of paper, card board and envelopes. The cover of the catalog is printed on Squannacook bristol and the leaves on Buff preference ledger.

Ernest C. Calkin, until recently with Llewellyn A. Marr, as previously noted, is occupying the same office in which Mr. Marr began business at 176 Federal street twenty-five years ago. The office is on the same floor as Mr. Marr's present office. The accounts of the Oswego Falls Corporation and of the National Waterproofing Company, formerly handled by Mr. Marr, were transferred to Mr. Calkins with Mr. Marr's approval.

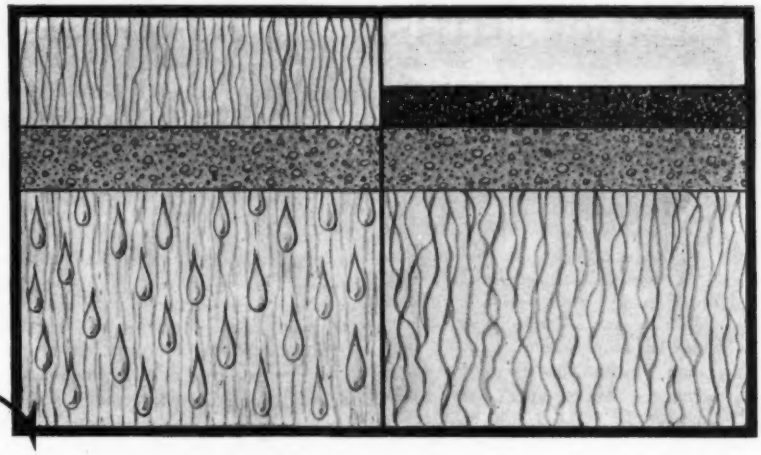
A "swiftly moving fire" on a truck of the Gatti Paper Stock Corporation, this city, destroyed paper valued at $100 last Friday in Jamaica Plain, Mass. The truck was proceeding along Center street with the fire burning without the knowledge of the driver. A motorist driving behind the truck noticed the flames and tried to attract the truckman's attention by sounding his horn. He also tried to pass the truck so as to give the alarm, but in vain at first. As the truck whizzed by an engine house a fireman saw the flames and sounded the house gong, but by the time the firemen were at their posts the truck was a quarter of a mile distant. The motorist finally succeeded in getting by the truck, forcing the driver to the curb, and informing him of the fire. The motorist incidentally sounded an alarm and with a short time the firemen had extinguished the flames.

Col. Edgar E. Smalley, managing director of Edwin Butterworth, Ltd., Manchester, England, and Bion Wheeler, manager of the New York office of E. Butterworth & Co., Inc., were at the Boston office of the company last week.

Harrie E. Waite, head of the sales department of John Carter & Co., Inc., who has been seriously ill for a considerable period, is now able to come to his office again, staying part of each day.

Otto Karnheim, president of Stone & Forsyth Company, who has been ill for a number of months, has recovered so that he is able to go to the box factory of the company at Everett, Mass.

Harold S. Plett, previously with E. Butterworth & Co., Inc., at the Boston offices, is now associated with Lewis Jennings, of New York, who was also formerly with the same company. Mr. Plett is to represent Mr. Jennings in Boston, with headquarters at 222 Summer street.



Heat passes easily through uninsulated roofs—ceiling temperature falls below the dew-point and moisture condenses.

When roofs are insulated with Armstrong's Corkboard heat loss is reduced and ceiling drip is effectively checked.

Ceiling Drip Checked

Corkboard roof insulation goes to the heart of the trouble . . . checks condensation by stopping heat waste

COLD fingers of winter reach down through uninsulated roofs of paper mills. Ceilings are chilled. Moisture condenses. Then ceilings sweat and drip.

And along with ceiling drip there's always an accompanying evil—fuel wastage. Ceiling "sweat" means heat loss through the roof—wasted fuel dollars.

But these losses can be stopped or greatly reduced with Armstrong's Corkboard. This quality roof insulation checks ceiling drip before it begins. It stops the heat leakage that causes cold ceilings.

Armstrong's Corkboard gives adequate insulation in a single layer—pays for itself in fuel savings—gets rid of that everlasting mill worry . . . ceiling drip, and adds years of life to roof decks.

Your roofer will be glad to insulate with Armstrong's Corkboard because it fills the requirements of a good, permanent roofing base. It provides a smooth, firm surface that will never warp, shrink, or buckle. It is not moisture-absorbent, and hence will not deteriorate. Your roofer will tell you, "Armstrong's Corkboard will last the life of the roof deck."

Let Armstrong engineers estimate the needs of your mill. Without obligation, they will tell you what thickness will be most effective and most economical. Write to Armstrong Cork & Insulation Company, 904 Concord Street, Lancaster, Pennsylvania; McGill Building, Montreal; 522 King Street, West, Toronto.

Armstrong's Corkboard Insulation

FOR THE ROOF OF EVERY BUILDING

Pulp and Paper Mills Are Active in Ontario

Manufacturers and Distributors of Standard Grades State More Orders Are Being Booked Than Anticipated—Excellent Outlook Foreseen for Fine Paper Market—Demand for Bonds, Ledgers and Writings Improves—Coarse Paper Trade Fairly Busy

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 20, 1930.—In both manufacturing and distributing circles the pulp and paper industry in Ontario has opened up auspiciously for the new year. With the somewhat dull finish to business in the closing weeks of the old year it was anticipated that paper manufacturing and distribution would be slow in getting under way in 1930 but more business is being done as January draws to a close than was anticipated. A few lines, it is true, still show backward tendencies but the bulk of fine papers are selling better than was looked for. For instance the book paper mills, which for a time were caught up with orders ahead, are now booking a satisfactory tonnage both for current and future delivery and have started the year quite actively. Bonds, ledgers and writings are gradually working up to a point where demand may be said to be really good for this season of the year and manufacturers and wholesalers are lead to believe that with the early start the year is going to be an excellent one for the fine paper trade.

The coarse paper market is not quite so active and is experiencing some hesitancy as it enters on the new year. Wrapping and paper bag plants are not as busy as they would like to be but it is believed that the coarse paper market will gradually come back to its own as the winter months give way to the spring season. It would seem as if the coarse paper field could do with a little more organizing and co-operation as to the manufacture and marketing of the product. There is a well sustained demand for kraft paper lines, both for domestic and export, and with a steady market in this line prevailing, sales should be materially extended in bulk this year.

The board mills are only moderately busy and are occupied in getting out orders taken last year for delivery this month, with no great volume of business ahead. It is expected, however, that as the year progresses enough business will develop to keep the mills operating at around eighty per cent of capacity and possibly more, for there are indications of good business at least by spring. Requisitions for board stock from the paper box industry are only on a moderate basis and it will be some weeks yet before the carton trade hits its stride again for the present year.

The paper converting trade is a little slow in developing although there is a fair demand for envelope papers and papers for blank books. Manufactured stationery lines, generally, however, are moving somewhat slowly. Mills manufacturing light weight papers report little cessation of activity during the transition period between the old and the new year and are all active. There is a gradually increasing call for coated stock and glassine, grease proof and waxing papers are furnishing enough orders to start the mills off well for 1930. Rag and paper stock dealers report a firm market with a good call for stock, particularly waste paper, from the paper mills, and with collections normal considering adverse weather conditions.

Safety Directors Discuss Problems

A meeting of the directors of the Ontario Pulp and Paper Makers' Safety Association was held in Toronto this week at which various questions of vital interest to the pulp and paper industry were discussed and which was presided over by H. G. Schanche, of the Abitibi Power and Paper Company. Other directors present were C. B. Thorne, of the International Paper Company, Hawkesbury; George Carruthers, of the Interlake Tissue Mills, Merritton; J. H. Albert, of the John R. Booth Company, Ottawa; C. Nelson Gain, of the Interlake Tissue Mills; J. Leslie, acting for K. S. Maclaughlin, of the Lincoln Division of the Alliance Paper Mills, Merritton; William Miller, Chief Sanitary Inspector for Ontario, and A. P. Costigan, secretary-engineer of the association. Various questions were discussed, particularly in reference to the relationship between the Workmen's Compensation Board and the jobbers cutting on private limits in respect to assessment by the Board. Another matter of interest which was thoroughly considered was the method of compiling monthly and annual statistics from reports received by the association from the various mills in Ontario. The budget for the year was under consideration and is now ready for submission to the Workmen's Compensation Board. Subsequent to the meeting the directors met for luncheon at the King Edward Hotel.

Notes and Jottings of the Trade

Fire recently visited the plant of the Prairie Paper Mills, Ltd., Winnipeg, and did damage to the extent of $10,000 to the building and stock.

Seventy-three million cords of pulpwood are involved in the transfer of public resources by the Federal Government to the Province of Manitoba. In addition there are estimated to be 5,300,000 horse power of hydro-electric energy and 123,000,000 acres of land in the Province that now becomes the property of Manitoba as a result of the transaction, in addition to mining prospects of incalculable value.

The Don Valley Paper Mills, Ltd., are carrying out a number of improvements at their plant in Toronto. Two new Jordan engines are being installed, together with electric drive for the paper machine and other equipment. The firm reports that the year has opened up well with them. They recently put on the market a new line of "Durex" tag which is designed to replace jute tag now being imported from the United States.

John H. Metcalf, who has been general purchasing agent for the Howard Smith Paper Mills, Ltd., for the past sixteen years, and the Canada Paper Company, for the past year, has resigned. Mr. Metcalf and wife will spend the winter in Florida.

Canadian wrapping paper interests have issued, for the benefit of the wholesale paper merchants, a booklet of trade customs designed to bring about more uniformity in the distribution of wrapping paper made in Canada. The booklet is giving general satisfaction both in Ontario and Quebec among manufacturers and wholesalers.

Toronto distributors of Howard Smith papers were guests of the advertising department of the company a few days ago at the King Edward Hotel. Arthur Hobson, manager of the Toronto office, presided, and a number of Toronto paper men handling the company's products, including R. I. Findlay, of the United Paper Mills, Ltd., spoke briefly on problems to be solved between the mills, the distributors and the customers. E. G. Rolph, advertising manager of the company, reviewed the advertising slate for 1930. Mr. Rolph told those present that apart from the regular campaigns, some publicity was intended on the subject of humidity, showing how some printers had overcome in part this bugaboo of the press and bindery rooms.

The Howard Smith Paper Mills, Ltd., have combined the woods department with the purchasing department and R. J. C. Hanford has been placed in charge of the reorganized work. Mr. Hanford has for some time been woods manager and in this capacity has been supplying the mills with wood both from the company's limits and from purchases in the open market.

"DISPERSO" CARBON BLACK

made with a new and better process

Ordinary Carbon Black, with its attendant disadvantages has been superseded by "Disperso"—much superior for paper production.

"Disperso" Carbon Black is free from air or 'fluff.' So, users of this better product are not put to the annoyance and expense of Carbon Black flying all over the plant, with grime and dust settling on paper stocks.

This exclusive Witco process, the Wheatley Press, completely eliminates the occluded gases. Quality is further improved by freedom from grit and specks. Send for samples of "Disperso" and quotations.

The Wheatley Press
(Patent No. 1,542,119)
Eliminates the air or "fluff" from Carbon Black.

Buy Direct and Profit Directly

WISHNICK-TUMPEER, Inc.
MANUFACTURERS AND IMPORTERS
CHICAGO · NEW YORK · AKRON
365 E. ILLINOIS ST · 251 FRONT ST · 1101 AKRON SAVINGS & LOAN BLDG.
TRENTON BOSTON

Witco owned and operated Century Carbon Co. and The Pioneer Asphalt Co.

Demand for Paper Satisfactory in Chicago

Fine Paper Market Moderately Active, With Future Prospects Considered Bright—Wrapping Paper Reported In Fairly Good Shape With Prices Firm — Tissue Mills Catching Up With Production Schedule—Lower Grades of Paper Stock Easier

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 20, 1930.—A fair amount of activity is noted in Chicago this week. Activity in ground wood papers has been perhaps the most noted, according to reports. The fine paper merchants are finding business only "just fair" with prospects for the immediate future, however, considered bright. News print, with conditions stabilized for at least an appreciable period ahead, is going ahead, with the volume of newspaper advertising said to be satisfactory. It is reported that Chicago's volume of printed literature, including many healthy direct mail campaigns, will have a good effect on paper houses supplying this grade of paper to the printers. The paper houses, themselves, have been sending out an unusually good grade of direct mail literature. Wrapping papers are reported in fair shape, with prices firm. Tissues are going through a somewhat dull period but with a number of the mills still reported to be just now catching up on their production schedules. In the waste paper market a number of price changes in the lower grades have been noted—changes downward. The higher grades remain about the same or show a slight improvement.

National Cornstalk Processes, Inc., Formed

Research suggested by Frank O. Lowden, former governor of Illinois, and carried on quietly for the last three years has culminated in a million dollar closed corporation formed to develop the industrial uses of cornstalks. The organization is to be known as the National Cornstalk Processes, Inc., and is already operating a plant at Dubuque, Iowa, with a daily capacity of 100,000 square feet of insulating wall board. The company pays $10.00 for the corn stalks baled and delivered. The study of commercial uses for corn stalk products was carried on by B. F. and G. N. Peek of Moline, Ill. The investigation disclosed practical processes for the making of wall board which had been developed at Iowa State College. The nineteen underwriters and original stockholders who financed the corporation without public offering includes the names of a number of widely known executives including Ex-Governor Lowden, Henry A. Wallace, publisher of farm journals, Frank H. Woods, of Lincoln, Nebraska, and Bernard Baruch, New York, capitalist.

Association Activities

With the next meeting of the Paperboard Industries Association to be held in Chicago four days of next week, unusual interest among members of the container, folding box and paper board industry in Chicago has been aroused. According to H. S. Adler, secretary, the attendance shows signs of being exceptionally good, due, for the most part, to the present situation existing in the industry necessitating discussion of first hand information. The meetings will be held January 21, 22 and 23.

The Chicago division of the Salesmen's Association, now featuring one speaker a month, with the other three meetings devoted to informal round table discussion, is preparing for an unusually large crowd to hear Mr. B. Offen discuss humidity and temperature control.

The Chicago Paper Association will hold its next meeting at the Bismarck Hotel, Chicago, on Tuesday, January 28, according to an announcement made today by D. F. Peck, of the Hanchett Paper Company, president of the association. The Chicago Paper Association is continuing its exhaustive study of various factors contributing to the costs of doing business and have already made unusual progress in placing the business of members on a more profitable basis.

News of the Trade

Bermingham & Prosser, Chicago, use an attractive envelope, reinforced, to send out a direct mail piece headed "Advertising to Architects with Oxford Dull Coated Paper," distributed by Bermingham & Prosser in this territory. The advertising is printed on Oxford dull coated ivory and includes, in addition to the main topic of discussion, excellent reference to the beauty and practicability of the paper itself.

W. L. Etnier of the W. L. Etnier Paper Company, 140 South Dearborn street, is now sojourning in Florida and, incidentally, missing a lot of blizzards that are, to say the least, interesting. He has been in the resort region since shortly after the first of the year.

Westvaco Inspirations for Printers, No. 51, issued by the West Virginia Pulp and Paper Company, is devoted to a discussion of Advertising Art, including copy, design, illustrations and typography. This issue is perhaps one of the most noteworthy the paper manufacturers have ever published. The year's well known advertising is discussed and illustrated and commented upon. Certain characteristics of the year's advertising are also noted and commented upon with reference to the modernistic influence and to new type faces. Color, according to the Westvaco text, continues to dominate the advertising galleries with direct color photograph as a new and interesting development. Novelty, a major factor in 1929 advertising, was also given attention. The issue deserves and will probably get the attention of a large number of printers. The Westvaco lines are admirably used throughout the book.

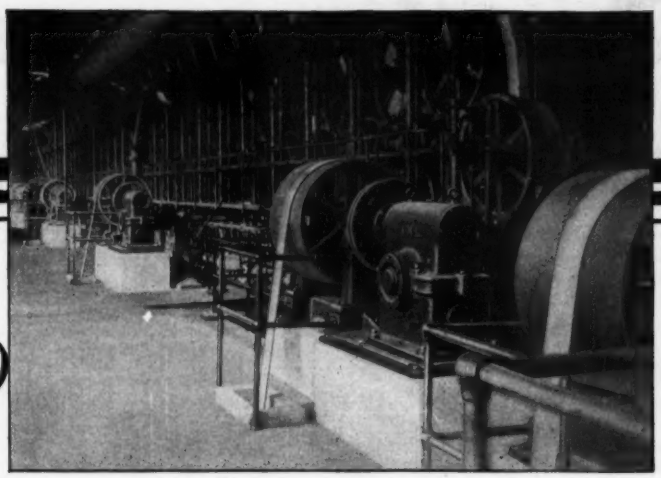
Hearst Reports Active Operations

Recent advices from Hearst, Ont., say that important developments in that district during the coming season will be the expansion of the pulpwood industry which will be operated north of the town as well as in the section to the south and east. To make this properly successful, however, it seems that the Algoma Central Railway will have to be extended further north, for all the rivers in this section flow in that direction, the destination of their waters being James Bay. The pulpwood would have to be floated down these streams to some central point and from there brought back south by rail. In this way it could be brought to a mill at Hearst, or at Michipicoten, or even at the Sault. At the present time quite a large amount of pulpwood cut in this immediate vicinity or south of Hearst is, where it is cut from private lands, shipped out via Michipicoten to mills in the United States, which leads to the belief that if the wood can be handled economically to that point for shipment out of the country it could be readily brought by rail to a mill established at Michipicoten. The utilization of pulpwood from the north, however, presupposes railway extensions, as there is no other way to make it available.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

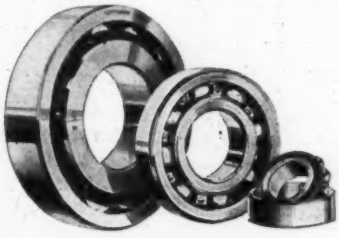
WASHINGTON, D. C., January 22, 1930.—The Government Printing Office has received the following bids for 37,700 pounds of white bond paper, 50 per cent rag: R. P. Andrews Paper Company, at 14.25 cents per pound; Stanford Paper Company, 15.3 cents; Barton, Duer & Koch Paper Company, 12.42 cents; Old Dominion Paper Company, 13.23 cents; Dobler & Mudge, 13.25 cents; Reese & Reese, Inc., 13.83 cents; Whiting Paper Company, 13 cents; and Atlantic Paper Company, 12.68 cents.



Where the drive must be Dependable and Efficient!

IT WOULD be folly to handicap highly economical and productive paper mill machines, with a drive that is unreliable and wasteful of power.

In the mill here pictured, the drive is through a battery of I.X.L. Speed Reducers, in which the high-speed worm gear shaft turns in NORMA-HOFFMANN Precision Roller Bearings. Thus the maximum security against bearing failure is assured at this vital point.



Foote Brothers Gear and Machine Company (Chicago, Illinois) makers of I.X.L. Units, are only one of some twenty builders of speed reducers who use NORMA-HOFFMANN Precision Bearings because of their demonstrated dependability in even the most exacting and continuous service.

Norma-Hoffmann Engineers, with a wide experience in paper mill practice, offer you the benefit of their counsel.

NORMA-HOFFMANN
PRECISION BEARINGS

NORMA-HOFFMANN BEARINGS CORPORATION STAMFORD, CONN., U.S.A.

N-1038

Demand for Paper Improving In Philadelphia

Standard Grades of Fine Paper In Excellent Request, Especially High Grade Writings, Bonds and Ledgers—Book Papers Continue to Move In Fair Volume—Wrapping Paper Distributors Are More Optimistic—Upward Trend In Prices Expected.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 20, 1930.—Paper and converted paper products have been in improved demand. While there is no great boom, there is a fair volume of orders accumulating at some of the mills. Among the distributors, inquiries are materializing in improved orders although there is lacking the volume of shipments normally occurring where a brisk holiday business has made inroads on stocks on hand. All along the line prices are firmer than they were a year ago. There are a few exceptions in specialties, where keen competition and lack of united effort has created a disturbing sentiment in the trade. This is true of the glassine markets where cutting is dominating sales to the disadvantage of the manufacturers and the converters of these products.

Glassine manufacturers are much annoyed by the business disturbance that has been created by certain manufacturers in the local field, where prices are so low that they make production a profitless pastime to the more interested producers who have the paper trade welfare at stake in their efforts to stabilize values. Those manufacturers who, through long affiliation with the paper making industry, have learned the value of stabilized and profitable production, are turning to the association system as a resource for creating better understanding. Glassine manufacturers like the McDowell Paper Mills, with its capable and experienced head, Charles McDowell, are campaigning for this betterment among the producers and are hopeful that the current year will develop greater co-operation in the matter of trade ethics and attention to the profitable conduct of this branch of the industry, with mutual benefit to the maker, distributor and converter of gasoline products.

Writing papers are among the products that are just now in demand, as the manufacturers are enjoying materialization of the inquiries that came just after the new year began. High grade writing adapted for papeteries, fancy stationery, announcements, and the better qualities in bonds and ledgers, are being moved in larger volume by the manufacturers and their representatives in this section. Book papers are in fair demand as the wholesalers and mill representatives turn to the 1930 sales promotion work and are successfully following up the late 1929 sales programs that resulted in a most gratifying business cycle for the specialists in these grades. Unfinished book papers are the most popular, while announcements stocks and cover papers also enjoy a fairly active market.

Wrapping paper dealers are among those distributors who are making the upgrade in the early 1930 markets and while no boom is at hand there is an optimistic business attitude taken by the distributors as a result of the better showing made by the sales departments in recent days. Kraft papers are more lively and manufacturers are anticipating an upward trend in prices rather than any revision downward, as usually occurs at this time of year. Kraft manufacturers who are sending their representatives into the local territory state that there is likely to be a rise in prices shortly, though adjustments were made to make values and terms more appealing a short time ago, immediately following the New Year.

Paper Trade Association Annual Meeting

Members of the Philadelphia Paper Trade Association met in full quota last Friday at the Benjamin Franklin Hotel to join in the luncheon and annual meeting. With the retiring president, Simon Walter, presiding, the entire afternoon was given over to the business routine of annual reports, after the group had assembled at the luncheon board. President Walter was host to the membership and to the incoming officers, in whose honor he entertained. During the after luncheon talks, Treasurer Charles Addoms, of the National Association, headed the list of speakers and in brief but forceful words told of the many activities which the national body had undertaken for the welfare of the paper industry. Arthur B. Sherrill, who until his retirement as vice president of Riegel & Co., Inc., was for many years an officer and past president of the association, was another guest speaker. Thomas F. Fort, Jr., of the Thomas W. Price Company, was enrolled in the ranks of the association at this meeting, and was among the most interesting of the speakers, giving in his frank and forceful way an informative and strongly expressed dissertation on trade subjects. President Walter extended greeting to his fellow members and thanked them for the splendid co-operation which they had extended during the terms of his office as president of the organization.

Election of Officers

The membership ratified the appointment of delegates to the National Executive Committee, represented by Norbert A. Considine, of the Paper House of Pennsylvania, on the Fine Paper Committee, and T. H. B. Smythe, of the J. L. N. Smythe Company, who was appointed delegate for the Wrapping Paper Division. These were elected officers for the coming year;—President W. S. Wilcox, Wilcox Walter Furlong Company; Vice President, N. A. Considine, Paper House of Pennsylvania; Treasurer, A. Richard Hartung, A. Hartung Inc.; and Secretary, Charles Wilder, of Wilder Brothers. W. S. Wilcox, following his election to the presidency, gave a cordial word of appreciation for the honor bestowed on him and thanked his associates for their expression of confidence in electing him to the highest office in the organization. Retiring President Simon Walter was appointed a committee of one to represent the Paper Trade Association on the All Philadelphia Council, sponsored by the Philadelphia Chamber of Commerce for the advancement of municipal interest.

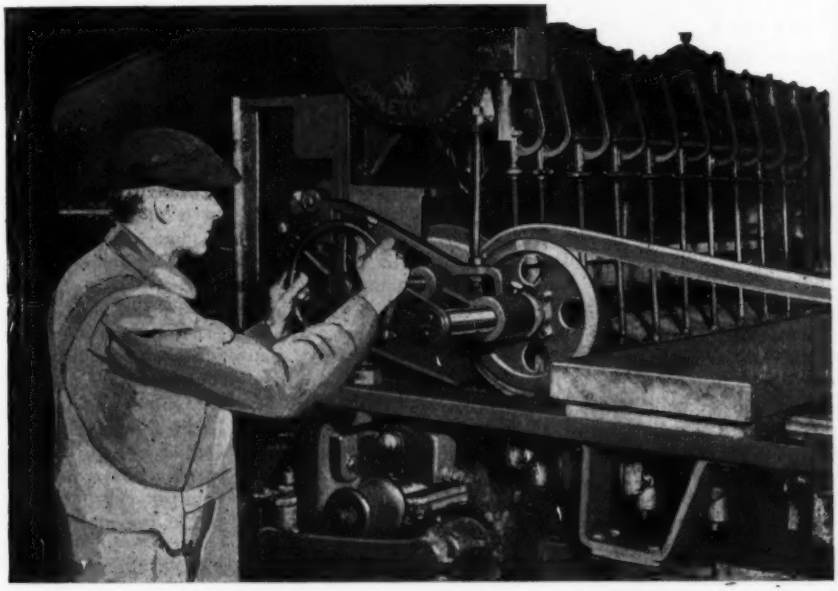
Garrett Executives Operated On For Eye Trouble

Two long associated members of the Philadelphia wrapping paper branch of the industry, and connected with the firm of S. S. Garrett, 240 South American street, were confined to the hospital last week following operations for serious eye troubles. They were Sylvester S. Garrett, head of the firm, whose eyes have been under treatment for some time and his long associated sales representative and manager of the business, A. Clarence Holland, who was confined to the Wills Eye Hospital for an operation for the removal of cataract. Mr. Holland retired from the business the first of the year owing to the eye disorder, after having been associated with Mr. Garrett for more than half a century. Both were reported as doing as well as could be expected for so serious operations. Mr. Garrett is one of the descendents of the pioneer paper manufacturing family of Garretts, whose ancestors were among the first paper makers in the United States.

Nashua Gummed & Coated Changes Manager

The Philadelphia officers of the Nashua Gummed and Coated Paper Company, located in the Widener Building, are now

MAKE YOUR PROFITS *where they START!*



This shows one of the exclusive features of the Voith Inlet which permits doctoring in while the machine is running.

OTHER VALLEY EQUIPMENT

- Jordan Engines
- Beaters, Breakers, Bleachers & Washers
- Flat and Rotary Screens
- Screw Presses
- Voith High Pressure Stock Inlets
- Centrifugal and Stuff Pumps
- Laboratory Equipment
- Stock Valves—Gate and Plug
- Stock Consistency Regulator
- Special Machinery

The man in charge of Production today has just as great a responsibility for increased profits as the man in charge of Sales—maybe even greater.

Paper prices, to a large extent, are governed by competition. Costs, on the other hand, are entirely within your own control.

Perhaps no piece of equipment in your mill is more important than your inlet. And—as is being demonstrated by 283 installations throughout the United States and Canada—no inlet is able to help the Sales Dept. more with *better quality* and the Production Dept. more with *lower costs* than the Voith High Pressure Stock Inlet.

How and why this is possible is told in an interesting booklet we have prepared on the Voith Inlet. Your inquiry addressed to the Valley Iron Works Co., Appleton, Wisconsin—will bring you a copy together with any special information you may desire.

VALLEY

Equipment for Paper and Pulp Mills

Pulp & Paper Mill Accessories, Ltd., Montreal, Canada, Canadian Representatives
New York Office: 350 Madison Ave.

under management of G. H. C. Marsh, who has taken over the duties of George H. Batchelder, recently resigned to engage in business on his own account. Mr. Marsh was formerly associated with the manufacturers at the Nashua, New Hampshire, plant as sales representative. The recently resigned manager has become affiliated with the Package Sealing Company, producers of gummed products, of 770 South Schuykill Ave. The firm has taken a large factory space and sales offices at this address, and has a well equipped plant for the production of sealing tapes, gummed sheets, and a complete line of gummed products used by the trade. Previous to organizing his own company last Fall, Mr. Batchelder was associated with the Nashua Gummed and Coated Paper Company in this city for seven years and has had broad experience in the distribution and manufacturing division of the business, which equips him for the development of his own concern.

Paper Houses Donate Typothetae Gifts

Among the Philadelphia paper trade concerns donating the awards that were given at the early January luncheon of the Philadelphia Typothetae last Monday at the Poor Richard Club Rooms, were H. M. Bailey, of the Hemingway Company; Lawrence Gipp, Raymond and McNutt Company and William Hentz, D. L. Ward Company. The luncheon was a post holiday gathering of the combined membership of the Typothetae and the affiliated industries in the graphic arts group.

Typothetae Features Direct Mail Advertising

Co-operating with the Philadelphia Paper Trade and its promotion of interest in Direct Mail Advertising as a sales advantage factor to both the paper and printing industries, the Philadelphia master printers' organization has been making this phase of trade work a prominent feature in recent weeks. Last Monday there was held at the Poor Richard Club luncheon, sponsored by the Typothetae, a special direct mail talk by Samuel E. Conybeare, advertising director of the Armstrong Cork Company, who explained why his company uses thousands of dollars worth of direct mail. In conjunction with the talk by Mr. Conybeare, there was an exhibit of the fifty foremost direct mail campaigns assembled by the D. L. Ward Company, fine paper dealers, who have made this collection of the year's best specimens of direct mail matter an annual event for the past decade or so. The meeting was made possible through the courtesy of the Direct Mail Advertising Association, which is holding these meetings before leading organizations in all the large cities in the country.

Direct Mail Exhibit Shown

Following the display of the direct mail campaigns for the past year collected by the D. L. Ward Company, of which George W. Ward is head, the exhibition will be staged at the headquarters of the Typothetae in the Public Ledger Building for the current week before it is sent on its way to the round of paper houses throughout the country, where it will be displayed in the early months of the current year. The 1929-30 assembly of direct mail matter is shown in a series of portfolios that contain a complete year's direct mail advertising by a single firm, and selected as among the foremost of such campaigns conducted in the year of 1929. Mr. Ward is in charge of the exhibits for the Atlantic Seaboard District for the D. M. A. A., and it is through him that the Philadelphia Typothetae has been extended the courtesy of the first 1930 exhibitions in the city.

General Electric Co. In New Offices

The Atlantic district sales and service departments of the General Electric Company were removed last week to new quarters in the Mitten Building, Broad and Locust street, where the sales and engineering departments occupy the 17th floor of the structure. In this Atlantic district office is located the headquarters of Frank Winslow, Philadelphia manager of the paper mill equipment division, who covers the South Atlantic and local territory paper mills for the General Electric Company. The service departments of the General Electric Company were recently assembled in the company's own structure at 427 North 7th street, where the General Electric Supply Corporation has its headquarters as merchandising distributors of General Electric products at wholesale and retail.

Westinghouse Executive Heads Electrical Association

William F. James, district manager for the Westinghouse Electric and Manufacturing Company, Philadelphia headquarters, has been elected president of the Electrical Association of Philadelphia for the current year. The association has enrolled in the membership the officers and executives of the most prominent electrical concerns of the city and the Philadelphia branches of the nation's leading manufacturing and distributing enterprises. It was organized in 1917 and has 200 members. Beginning February 1, the association will remove its headquarters from 127 South 12th street to the Benjamin Franklin Hotel

American Bag & Paper Co's. New Coal Sack

A new coal sack has been developed by the American Bag and Paper Company, with plant and headquarters at Water and South streets. The new coal bag is of the duplex type, made in kraft and printed in one or more colors. It has a specially treated lining that develops a durable and strong container for heavy products such as coal. The firm is also developing a complete assortment of gasoline bags and shopping bags as specialities along with its general lines of standard bags used by the grocery, confectionery and other trades. New equipment has been added to take care of the production of the latest innovations and to permit of printing in one or more colors at a single operation. The American Bag and Paper Company, of which Samuel Kardon is head, is among the larger of independent paper bag manufacturers in the city. The proprietor is one of several brothers engaged in the paper converting and paper business in the city as organizers of other concerns.

Jones Foundry Celebrates 40th Anniversary

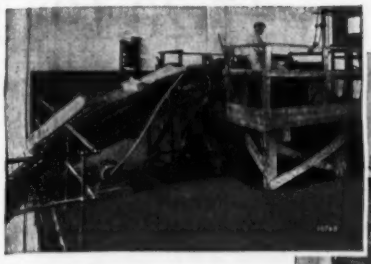
The W. A. Jones Foundry and Machine Company manufacturers of all sorts of gears and gear drives and of spur, worm, and herringbone speed reducers, as well as flexible couplings pulleys, etc., are this year celebrating their fortieth anniversary. The four decades they have been in business mark a continuous advancement in their knowledge of power transmission and an increase in their facilities to supply the very best equipment of this sort it is possible to turn out.

There have been a few changes in the executive personnel. The present officers of the corporation are as follows: W. G. Jones, president; J. A. Sizer, secretary and treasurer; G. W. Page, vice-president in charge of purchasing; W. F. Coleman, vice-president in charge of manufacturing and F. H. Hoge, vice-president in charge of engineering.

Completes Water Flowage Rights

[FROM OUR REGULAR CORRESPONDENT]

MECHANICVILLE, N. Y., January 11, 1930.—A deed filed this week in the county clerk's office shows that the West Virginia Pulp and Paper Company has received permission from Edith Loveland for the right in perpetuity to flow lands by use of gates or any other hydraulic structure maintained at or near the present dam of the company between the towns of Stillwater and Schaghticoke. The right of way covers about 100 acres of what is generally known as the Mill farm, formerly the property of the late John Wetsel. The land is part of a tract needed by the company to complete its water flowage rights. The company has been using the land but until now had not filed any deed.



The malleable roller chain on this conveyor operates smoothly and easily requiring very little power. The rollers revolve on bosses cast integral with the side-bars. The pins are held rigid in the outside bars thus confining wear to the comparatively long surface of the bosses which act as thimbles.

Handling

Pulp Laps Up A 35° Incline

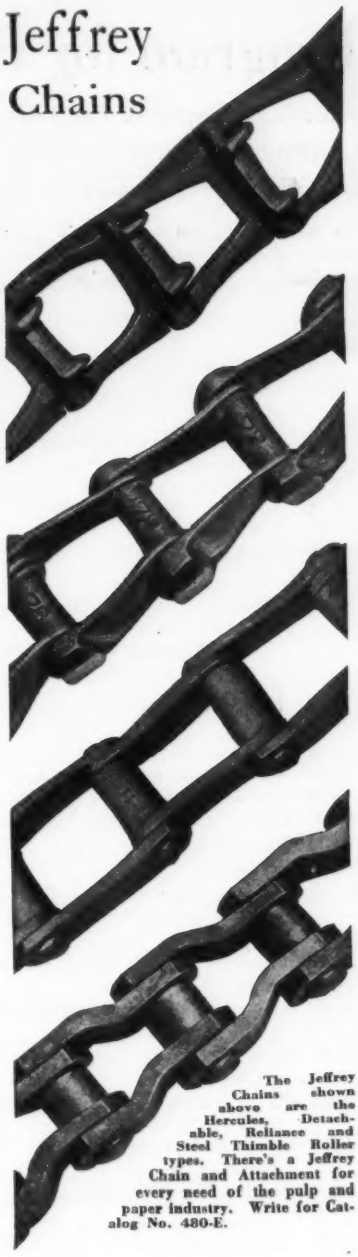
Handling pulp laps from ground floor storage up a steep incline to the lap shredder on the second floor is an easy job with a Jeffrey Wood Apron Conveyor. In this mill one man keeps the conveyor loaded; another takes the laps from the conveyor and feeds them direct to the lap shredder. Here, labor is reduced to a minimum.

In addition to handling pulp laps, Jeffrey Wood Apron Conveyors are used for handling baled rags and with suitable variation in the shape of the wood flights, paper rolls, boxes, and barrels can be handled.

Jeffrey Steel Apron Conveyors are used in power and steam plants as feeders or intermediate conveyors handling coal.

Both Wood and Steel Apron Conveyors are completely described in Catalog No. 435-T. We will be glad to send you a copy.

Jeffrey Chains



The Jeffrey Chains shown above are the Hercules, Detachable, Reliance and Steel Thimble Roller types. There's a Jeffrey Chain and Attachment for every need of the pulp and paper industry. Write for Catalog No. 480-E.

The Jeffrey Manufacturing Company

931-99 North Fourth St., Columbus, Ohio

New York	Pittsburgh	Cincinnati	Charleston, W. Va.	Houston
Buffalo	Utica	Cleveland	Milwaukee	Salt Lake City
Rochester, N. Y.	Boston	Detroit	St. Louis	Birmingham
Philadelphia	Scranton, Pa.	Chicago	Denver	Atlanta

Jeffrey Manufacturing Co., Ltd. of Canada, Head Office and Works: Montreal—Branch Office: Toronto

JEFFREY
MATERIAL HANDLING EQUIPMENT

Jeffrey Products for Pulp & Paper Mills

- Elevators
- Conveyors
- Portable Loaders
- Coal and Ashes Handling Equipment
- Skip Hoists
- Chains and Attachments
- Sprocket Wheels—Gears
- Crushers—Pulverizers
- Locomotives
- Ventilation Fans

Program for Paper Week, February 17-20,1930

American Paper & Pulp Association Announces Tentative Schedule of Meetings for the 53rd Annual Convention, to be Held at the Pennsylvania Hotel, New York—Annual Meeting of Association to be Held In Banquet Hall on Thursday, February 20

A tentative schedule of meetings for the fifty-third annual convention of the American Paper and Pulp Association at the Hotel Pennsylvania, February 17 to 20, 1930 follows:

Monday, February 17, 1930

Forenoon

9:30 Standing Committee No. 1 Kraft Tape—Exhibit No. 3
10:00 Cost Association of the Paper Industry—Parlor No. 2

Afternoon

12:30 Committee on Simplification and Standardization of Printing Papers (Luncheon)—Parlor C
2:00 Cost Association of the Paper Industry—Parlor No. 2
2:30 Southern Kraft Manufacturers Association Exhibit No. 4
3:00 Salesmen's Association Executive Committee Exhibit No. 3
7:00 Glazed & Fancy Paper Manufacturers Association Executive Committee (Dinner)—Parlor A

Tuesday, February 18, 1930

Forenoon

9:30 Technical Association—General Session—Grand Ball Room
9:30 American Waxed Paper Association—Exhibit No. 3
9:30 American Waxed Paper Association—Exhibit No. 6
9:30 Cost Association of the Paper Industry—Parlor No. 2
10:00 Cover Paper Manufacturers Association—Parlor No. 1
10:00 National Sulphite Paper Manufacturers Association Parlor C
10:00 Salesmen's Association of the Paper Industry—Foyer Banquet Hall

Afternoon

1:00 American Waxed Paper Association (Luncheon)--Exhibit No. 3
1:00 National Sulphite Paper Manufacturers Assn. (Luncheon) Parlor C.
12:30 Salesmen's Assn. of the Paper Industry (Luncheon) Banquet Hall
1:00 Glazed & Fancy Paper Manufacturers Assn. (Luncheon) Exhibit No. 5
1:00 Supply & Equipment Section, Inc. (Luncheon) Parlor D
1:00 Committee on Waste Utilization and Stream Improvement (Luncheon)—Parlor A
2:00 Technical Association (Power and Mechanical Engineering)—Parlor B
2:00 Technical Association (Paper Testing)—Exhibit No. 1
2:00 Technical Association (Training for the Industry Committee)—Foyer Banquet Hall
2:00 Cost Association of the Paper Industry—Parlor No. 2
2:30 Writing Paper Manufacturers Association (Rag Content Paper Division)—Parlor No. 1
2:30 United States Pulp Producers Association—Exhibit No. 4
2:30 American Waxed Paper Association—Exhibit No. 3
2:30 American Waxed Paper Association—Exhibit No. 6
4:00 Paper Bag Manufacturers Institute—Parlor A
7:00 Paper Bag Manufacturers Institute (Dinner) Parlor A

Wednesday, February 19, 1930

Forenoon

9:30 American Waxed Paper Association—Exhibit No. 3
9:30 American Waxed Paper Association—Exhibit No. 6
9:30 Cardboard Manufacturers Association Exhibit No. 4
9:30 Technical Association (Power and Mechanical Engineering)—Banquet Hall
9:30 Technical Association (Cellulose and Fine and Special Papers)—Exhibit No. 1
9:30 Technical Association (Alkaline Pulping Methods and Waste)—Foyer Banquet Hall
9:30 Cost Association of the Paper Industry—Parlor No. 2
10:00 Gummed Industries Association—Parlor A
10:00 National Kraft Paper Manufacturers Association—Parlor C
10:00 Woodlands Section, A. P. & P. A.—Parlor B
10:00 Writing Paper Manufacturers Association—Parlor No. 1
10:00 Bristol Board Manufacturers Exhibit No. 5

Afternoon

12:30 Cost Association of the Paper Industry (Luncheon) Parlor No. 2
12:30 Woodlands Section, A. P. & P. A. (Luncheon)—Parlor B
1:00 Gummed Industries Association (Luncheon)—Parlor A
1:00 National Kraft Paper Manufacturers Assn. (Luncheon) Parlor C
1:00 American Waxed Paper Association (Luncheon) Exhibit No. 3
1:00 Paper Makers Advertising Club (Luncheon) Exhibit No.5
1:00 Sulphite Waste Utilization Sub-Committee (Luncheon) Parlor D
2:00 Technical Association (Corrosion)—Exhibit No. 1
2:00 Technical Association (Physical Standards for Pulp) Banquet Hall
2:00 Technical Association (Paper Board)—Foyer Banquet Hall
2:30 Writing Paper Manufacturers Association (Sulphite Bond Division)—Parlor No. 1
2:30 Southern Kraft Manufacturers Association—Exhibit No. 4
2:30 American Waxed Paper Association—Exhibit No. 3
2:30 American Waxed Paper Association—Exhibit No. 6

Thursday, February 20, 1930

Forenoon

9:30 Technical Association (Stuff Preparation)—Foyer Banquet Hall
9:30 Technical Association (Sulphite)—S. E. Ball Room
9:30 Technical Association (Special Closed Meeting of Coated Paper Committee)—Foyer S. E. Ball Room.
10:30 American Paper and Pulp Association Annual Meeting—Banquet Hall

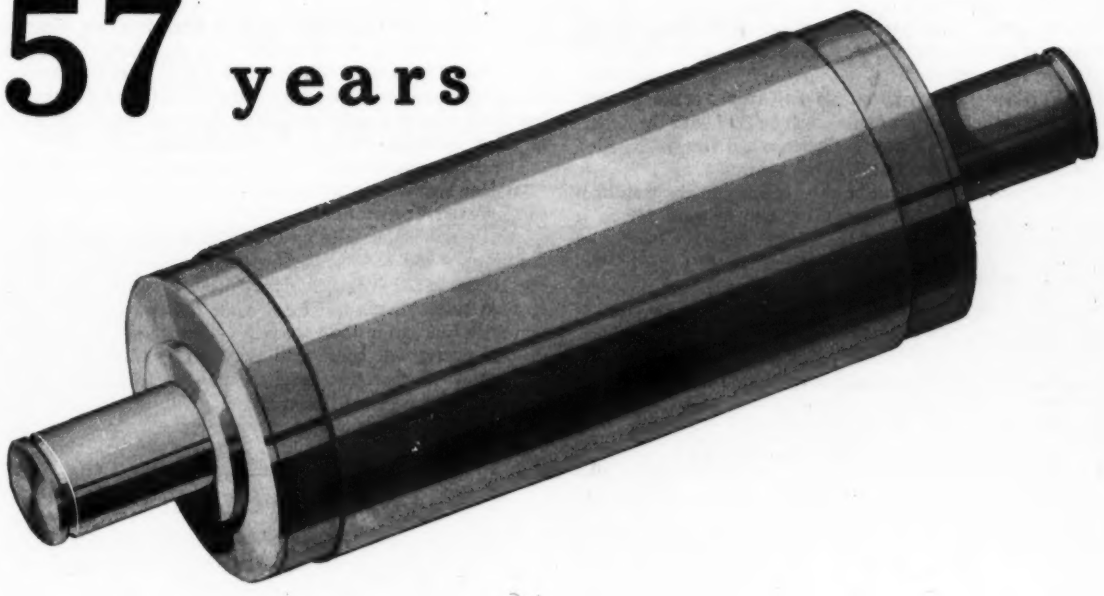
Afternoon

12:30 Technical Association—General Session (Luncheon)—S. E. Ball Room
1:00 American Paper and Pulp Association—Presidents' Luncheon—Parlor No. 2
1:00 Binders Board Manufacturers Association (Luncheon)—Parlor A
2:30 American Paper and Pulp Association—Annual Meeting—Banquet Hall

Evening

7:00 American Paper and Pulp Association—Reception—Foy. Gr'd Ball Room.
7:30 American Paper and Pulp Association—Banquet—Grand Ball Room

57 years



PERKINS CALENDER ROLLS

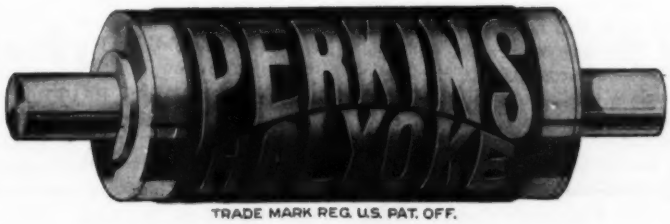
When you specify Perkins Calender Rolls you enlist for your service the aggregate of fifty-seven years experience in this highly specialized industry.

Perkins Calender Rolls have the distinguishing mark of individuality because of the Perkins methods of manufacture. Every roll is made with a knowledge of the work it will be required to perform. Every roll is made to stand heat better and wear longer.

LARGEST MAKERS OF CALENDER ROLLS IN THE WORLD

B. F. Perkins & Son, Inc., Holyoke, Mass.

COTTON ROLLS
PAPER ROLLS
EMBOSSING ROLLS
CHILLED IRON ROLLS
GRANITE PRESS ROLLS
WEB SUPERCALENDERS
GLASSINE SUPERCALENDERS
FRICTION CALENDERS



TRADE MARK REG. U.S. PAT. OFF.

EMBOSSING CALENDERS
SHEET CALENDERS
PLATERS
MULLEN PAPER TESTERS
TENSILE TESTERS
VENTILATING FANS
RAG CUTTERS
STOCK CUTTERS
PAPER DAMPENERS
BLEACH EJECTORS

Huge Alaskan Development Announced

A project involving ten billion feet of pulp timber including spruce and hemlock, at an estimated cost of $5,000,000, and the construction of two paper mills, one at Ketchikan and the other at Juneau, Alaska, with an ultimate daily output of 500 tons each, has been announced by B. F. Heintzleman, assistant district forester in charge of forest management in the territory. Mr. Heintzleman stopped in Portland January 10 on his way from Alaska to California. In San Francisco a conference will be held with the Zellerbach Paper Company and George T. Cameron and Harry Chandler, California publishers, all interested in the project.

The pulp from these mills will be used entirely in the manufacture of news print and the timbercutting will be paid for as it advances. However, according to Mr. Heintzleman the companies will be obliged to pay for their timber in accordance with the prevailing prices after the first ten-year grant has been concluded. "It has been suggested that the primary cost of the timber during the first ten-year period will be 50 cents a thousand feet of hemlock and $1 for the spruce," said Mr. Heintzleman.

The conditional awards of the timber on these tracts were made in 1927 and the period of time since then has been spent in making a detailed survey both of timber and waterpower possibilities.

"This promised development of the pulp and paper industry is the biggest thing since the Klondike rush," said Mr. Heintzleman, "and wide interest is centered on southeastern Alaska." As the conditional awards of timber and waterpower rights terminate in July it has become necessary for the concerns interested to reach an early decision on their plans. When these plans are filed the companies will, if submitted plans are satisfactory, receive permanent awards on the rights, both timber and waterpower, and the concerns will then be allowed until 1932 to construct their mills and get them in operation.

While the government stipulations call for a daily output of 500 tons each for the two mills, the initial output will probably be around 250 tons a day, with the full output in effect shortly after the plants get under way.

Mr. Heintzleman says that the timber cutting is a most important problem. All this will be done on the reforestation plan in order that it will provide a constant timber supply for the future rather than a fleeting industry which would then be compelled to move on with raw material supply exhausted. The cutting will be uniform in amount by the day and the year and will be done on the cycle plan.

Mr. Heintzleman will go from California to Washington, D. C., to confer with federal forestry officers and with the federal power commission.

Container Corp. Absorbs Sefton

The Container Corporation of America adds to its organization one of the oldest manufacturers in the packaging industry in the acquisition of the Sefton Manufacturing Corporation, effected last week. The absorption of Sefton brings to Container Corporation additional annual business of approximately $5,500,000 a year and will make the 1930 total approximately $23,000,000, Walter P. Paepcke, president, estimates.

Container Corporation was formed in 1926. Although in business less than four years, it is today the largest producer of boxes and containers in the country. It has led in the production of box board, solid fiber and corrugated containers and test liners. The Sefton acquisition will bring it additional business in this field, and also give it a complementary line of products in a field which Container has not previously touched, the manufacture of folding boxes, waxed cartons, suit boxes, display cartons, paper pails and other boxes so extensively used today.

Container Corporation plants are located at Chicago; Kokomo and Anderson, Ind.; Cincinnati, Circleville and Cleveland, Ohio; Fairmont and Charleston, W. Va.; Bridgeport, Conn.; Natick, Mass., and Philadelphia. Branch sales offices are located all over the country.

Sefton will add to this group three fabricating plants, located at Chicago, Anderson, Ind., and Brooklyn. The Brooklyn plant will bring Container more ready access to the large metropolitan area of New York.

The Sefton company also brings to Container the Dixon Board Mills, Inc., located at Carthage, Ind., producing 30,000 tons of paper board annually. These mills filled approximately half of the raw material requirements of the Sefton Manufacturing units, leaving a large tonnage requirement for raw materials which can be filled by existing Container Corporation mills.

The entire personnel of the Sefton Company will be retained by Container and Wesley M. Dixon, president, will become a director of Container Corporation.

The Sefton Manufacturing Company was one of the first manufacturers of merchandise packages. A predecessor company began operations in Anderson, Ind., in 1888. Its first products were wooden butter dishes and hand made oyster pails. The company moved to Chicago in the next year and entered upon the manufacture of corrugated board and packaging specialties.

Container Corporation acquired the assets of Sefton Manufacturing Corporation and Dixon Board Mills, Inc., from Sefton, Inc., the holding company, giving in exchange 117,514 shares of Class "A" stock.

Paper Salesmen's Annual Meeting

The annual business meeting of the Salesmen's Association of the Paper Industry will be held at the Pennsylvania Hotel, New York, at 10:00 a.m., Tuesday, February 18. With the expectation of repeating last year's successful experience with a speaker who had previously appeared before the New York Division, the association has this year secured as speaker to follow the business session, Irving Fellner, publishing director of *System*, one of the McGraw-Hill publications. Mr. Fellner completely captured the New York Division members who heard him at a recent luncheon and his talk will be most constructive.

The title of Mr. Fellner's address, which will be illustrated by charts, will be "An Approach to A Marketing Problem." It is a discussion of the methods used to solve a specific marketing problem, with sufficient emphasis on general principles to point the way to their application to other marketing problems. One of the most successful paper companies in the country obtained help from the McGraw-Hill Company when it organized its market research department. Mr. Fellner has also had personal experience with the marketing problems of a converter of paper whose market had changed almost over night.

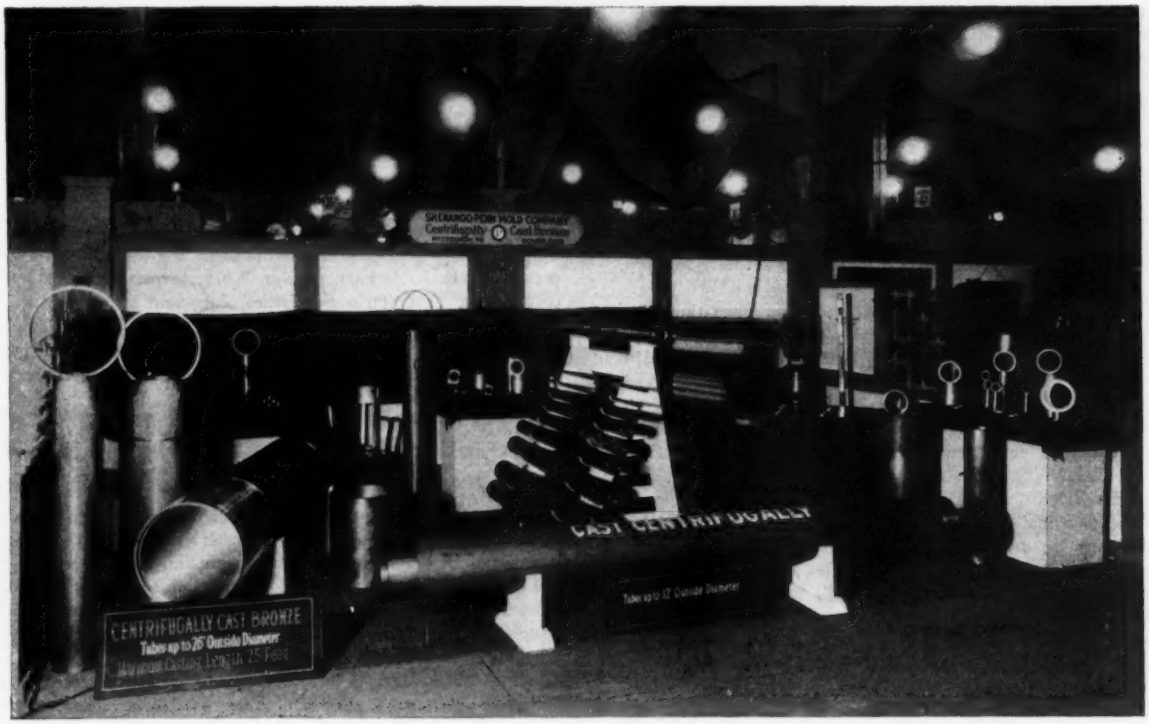
Since sales departments and cost departments must cooperate for the successful solution of problems of market research, the committee has extended an invitation to the members of the Cost Association of the Paper Industry to join in hearing Mr. Fellner's address. The consequent discussion, in which both salesmen and cost accountants will take part, will be a particularly valuable feature of this meeting.

Diamond Mills Paper Co. Report

Owing to the misplacement of several lines on page 159 of the 1930 edition of Lockwood's Directory of the Paper and Allied Trades, the report for the mill of the Diamond Mills Paper Company at Bloomfield, N. J., was incorrectly printed. The correct report is as follows:

DIAMOND MILLS PAPER CO (R. H. Thompson, Pres.; E. Van Voorhis, Treas.; H. P. Van Gilder, Sec.) Office, 53 Park Pl., New York. SILVER SPRING MILL. S. P., Bloomfield. Two 800-lb. and two 1000-lb. Beaters, two Jordans and one 800-lb. Washer. One 62-inch and one 84-inch Fourdriniers. Width of Super Calenders, 36 inches. Widest trimmed sheet, 78 inches. Steam. Copying, Carbon, Cigarette and Tissues. 5,000 lbs. 24 hours.

SHENANGO-PENN
Centrifugally Cast Bronze



THE UNIQUE method by which Shenango-Penn Bronze is cast and cooled in a mold revolving at high speed, produces BUSHING stock that is not only perfect in metal grain structure but also so close to specified size that the very minimum of machining is necessary to reduce it to the desired dimension.

Ask us to acquaint you in detail with the remarkable quality of this superior bronze for your roll covers.

SHENANGO-PENN MOLD COMPANY

Executive Offices:
PITTSBURGH
PA.

Inquiries for Quotations and Information should be sent to works office, Dover, Ohio

New York Trade Jottings

The Seventeenth Annual Convention of the National Association of Waste Material Dealers, Inc., will be held at the Astor Hotel, New York, on March 17, 18 and 19.

* * *

Harold S. Plett, formerly connected with the Boston office of E. Butterworth & Co., Inc., is now associated with Lewis Jennings, New York, also formerly with the Butterworth organization. Mr. Plett will represent Lewis Jennings in Boston.

* * *

Harry Lindquist, formerly sales manager of the Missisquoi Pulp and Paper Company, has been appointed Eastern manager of sales to the Standard Division of the Sutherland Paper Company, of Kalamazoo, Mich. Mr. Lindquist will make his headquarters at the Eastern Office of the company, 51 East 42nd street, New York.

* * *

N. Mastronardi & Co. are renovating and equipping their new plant at 236-238 South street, New York, which will house all their waste paper packing operations. It has six stories and 50,000 square feet and is near freight terminals of leading lines serving Manhattan and steamship lines used for waste shipments to New England. Their present location is 24 New Bowery.

* * *

The Claremont Paper Company, Inc., announce the appointment of T. H. Mullen to succeed Mr. Winter in their Western territory. The Chicago office will be closed on January 31 and Mr. Mullen will make his headquarters at the New York office, which is located at 33 West 42nd street, New York. This change in the manner of serving their western customers will give them closer contact with the general sales office and the mill.

* * *

Lee H. Bristol, vice-president of the Bristol-Myers Company, was the principal speaker at the weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, held at the Fraternities Club, New York, last Monday. The subject of Mr. Bristol's address was "The Director of distribution," the importance of whose duties were emphasized to considerable effect. Mr. Bristol's address was followed by an interesting discussion in which many of the members took part.

* * *

The Freeport Texas Company, New York, reports for the year ended on November 30, 1929, a net income of $4,085,041 after expenses, reserve for depreciation, taxes and other charges, equivalent to $5.60 a share earned on 729,844 no par shares of stock. This compares with $3,275,576, of $4.49 a share, in the previous year. Net profit for the quarter ended on November 30, was $1,342,165, equivalent to $1.84 a share, compared with $869,357, or $1.19 a share in the preceding quarter and $1,323,182, or $1.81 a share, for the quarter ended on November 30, 1928.

Swedish Labor Troubles Settled

WASHINGTON, D. C., January 22, 1930.—Negotiations in the Swedish paper industry dispute arising from the workers' demands for wage increases were broken off recently according to unofficial information received here. At the same time the conflict in the Norwegian ports that threatened to lead to a general strike in sympathy with the paper and pulp mills has been settled and thus the greater conflict avoided.

Harvey Paper Mill to Build Bag Mill

WELLSBURG, W. Va., January 20, 1930.—Immediate construction of a paper bag factory here, by the Harvey Paper Mills Company was announced today. This concern, a subsidiary of the Pillsbury Flour Company, now owns and operates a paper factory here. The new bag factory will have a capacity of four million bags per month.

Ontario Specialties Buys Building

WATERTOWN, N. Y., January 22, 1930.—Because of the steady increase in the demand for their products, Ontario Specialties, Inc., of 578 West Main street, has purchased from the J. B. Wise Company, of Watertown, the large stone building on Water Street which was formerly used for the manufacture of munitions. This building has a present capacity of about 50,000 square feet, and there is available space to permit the erection of additional buildings should future needs require it.

Sherman C. Stuart, plant manager of Ontario Specialties, has announced that the business will be transferred to the new quarters just as soon as the necessary alterations can be completed. At present, the force consists of forty-five to sixty employees, according to the seasonal demands, and the maximum force, operating at capacity in the new quarters, will be about eighty employees.

Ontario Specialties, Inc., was established in 1918, and among its products now manufactures pads, stenographer's notebooks, composition books, tablets, and other school supplies. While a large proportion of its output is shipped to the domestic trade, a considerable part of these products goes to consumers in the Phillippines, Cuba, Porto Rico, Mexico, and South American countries.

The general sales offices of the concern are located at 30 East 42nd street, New York City, and sales are handled exclusively by T. J. McCormick, general sales manager, who also serves as vice-president. R. J. Parham, of New York, formerly of Watertown, is president of Ontario Specialties, Inc., and Carl B. Martin is secretary and treasurer.

Mr. Martin was in Watertown Thursday, January 16, and completed the real estate transaction. L. C. Mitchell represented the Wise Company in the sale.

To Try Watermark Suit

[FROM OUR REGULAR CORRESPONDENT]

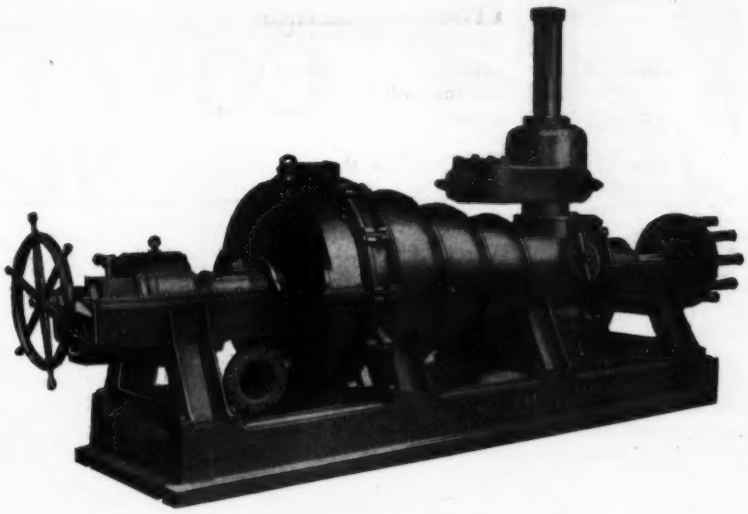
ALBANY, N. Y., January 20, 1930.—The Federal government has made photostat copies of 65 or more letters in possession of the International Brotherhood of Papermakers relating to the sale and distribution of union watermarked papers and it is understood they will be introduced in connection with certain testimony in Federal court here this week when officers of the organization will appear as defendants in an action charging violation of the Sherman anti-trust law. Matthew H. Burns, newly elected president, has been spending several days in getting these letters out of the files and having the photostat copies made. It was also learned that W. R. Smith, who recently retired as head of the organization, had received notice from the Federal government that he would be called to testify as to the activities in promoting the sale of the union watermarked paper. It was also said that representatives of the Alden Paper Company, of Holyoke, which has been named as co-defendant, will be called to testify. It is alleged that the Alden Company acted as distributing agent of the union in the marketing of the paper.

Canadian Paperboard Passes Dividend

The Canadian Paperboard Company, Ltd., has suspended its dividend payment on the preferred shares, as a result of the over-expansion and keen competition in the industry coupled with the operating difficulties incidental to bringing the Toronto mill into production. The company is one of the largest producers of paperboard in Canada. It owns four plants with a total daily capacity of 220 tons of paperboard. These plants are at Montreal, Campbellford, Frankford and Toronto.

Preferred dividends have been paid regularly since issuance of the stock in 1926. Disbursements were made on the common stock in 1924 to 1928 inclusive. An initial dividend of 3 per cent was paid in 1924, 2 per cent in 1925 and 1926; 1 per cent in 1927 and half of one per cent in 1928.

The outlook is said to be improving, operations being at a higher rate with a better price. It is felt therefore that the next fiscal period will show gains in earnings.



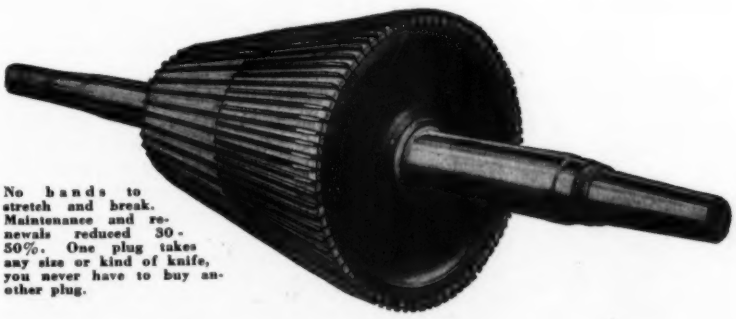
No. 4 Emerson Jordan equipped with Bolton Inverted Wedge Plug

Built for the hardest kind of service, the No. 4 Emerson Jordan equipped with the Bolton Inverted Wedge Plug will reduce shutdowns for repairs and renewals, get longer wear out of the knives, increase tonnage output per jordan, lower your cost of operation.

No other engines offer you all of the advantages found in these new Emerson Jordans. Modern, efficient, they will reduce your machine room costs and insure steady, dependable production. Write for complete information, estimates.

PATENTS PENDING

Section showing the construction of the Bolton Inverted Wedge Plug. Wedge woods larger at bottom than at top, knives lock-slotted entire length of plug; woods or knives cannot work loose. Chipping does not weaken support of knives. Wedges and knives are driven in from end, easily and quickly replaced when necessary.



No bands to stretch and break. Maintenance and renewals reduced 30-50%. One plug takes any size or kind of knife, you never have to buy another plug.

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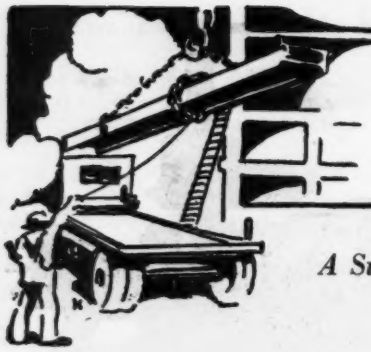


CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Tomahawk, Wis.—The Tomahawk Kraft Paper Company will soon proceed with superstructure for new addition to mill, for which foundations recently were laid. It will be used for general increase in output and is scheduled for completion in the spring. Estimated cost has not been announced.

Tuscaloosa, Ala.—The Champion Fibre Company, Canton, N. C., is said to have negotiations under way for a tract of land at Fox, in the vicinity of Tuscaloosa, to be used in connection with paper mill operations. Details regarding enterprise are temporarily withheld.

Richmond, Va.—The Hinde & Dauch Paper Company, Sandusky, Ohio, manufacturer of corrugated fiber boxes and containers, cardboard products, etc., has concluded arrangements for the purchase of the plant and business of David M. Lea & Co., Richmond, manufacturer of kindred products, and will consolidate with its organizaton. It is understood that the purchasing company will continue operations at the Richmond plant, and will carry out an improvement program in the future to provide for increased facilities.

Bingham, Me.—In connection with preliminary work for the new paper mill to be constructed by the Maine Seaboard Paper Company at Bucksport, Me., recently reported in these columns, the Maine Central Power Company, 317 Water street, Augusta, Me., parent organization, is perfecting plans for the construction of a hydroelectric generating plant on the Kennebeck River, near Bingham, to be used for power service at the mill, as well as other industrial operations in this territory. Work will be placed under way early in the spring on a three-story structure, 60x160 feet. General contract has been let to the Morton C. Tuttle Company, 31 St. James street, Boston, Mass., which has also secured the contract for the paper and pulp mill. The hydroelectric power project is reported to cost more than $5,000,000, including transmission system. In connection with the news print mill of the Maine Seaboard Company, an award for structural steel has been let to the New England Structural Company, 38 Chauncy street, Boston, and superstructure will be placed in progress at early date. The mill is reported to cost close to $8,000,000, and will develop an initial capacity of 270 tons of news print per day. George F. Hardy, 309 Broadway, New York, is engineer for the project.

New York, N. Y.—Fire, January 13, damaged a portion of the storage and distributing plant of the Eastern Paper Box Company, 405 East Fourth street, manufacturer of corrugated paperboard containers and boxes, with loss reported in excess of $20,000.

Muskegon, Mich.—The Central Paper Company is running on a normal production schedule giving employment to about 420 operatives as compared with about 462 persons a year ago at this time. The company is said to have booked business to insure continuance at present output for some weeks to come, and expects to hold to this schedule indefinitely.

Kimberly, Wis.—The Kimberly-Clark Corporation, Neenah, Wis., will defer the construction of proposed new addition to its mill at Kimberly, recently referred to in these columns and expects to proceed with the work in the spring, when the structure will be pushed to completion. It will be one-story, 122x127 feet, designed primarily for finishing service with portion to be used for storage and distribution, and is reported to cost close to $100,000, with equipment. The O'Keefe-Orbison Engineering & Construction Company, 215 East Washington street, Appleton, Wis., is engineer.

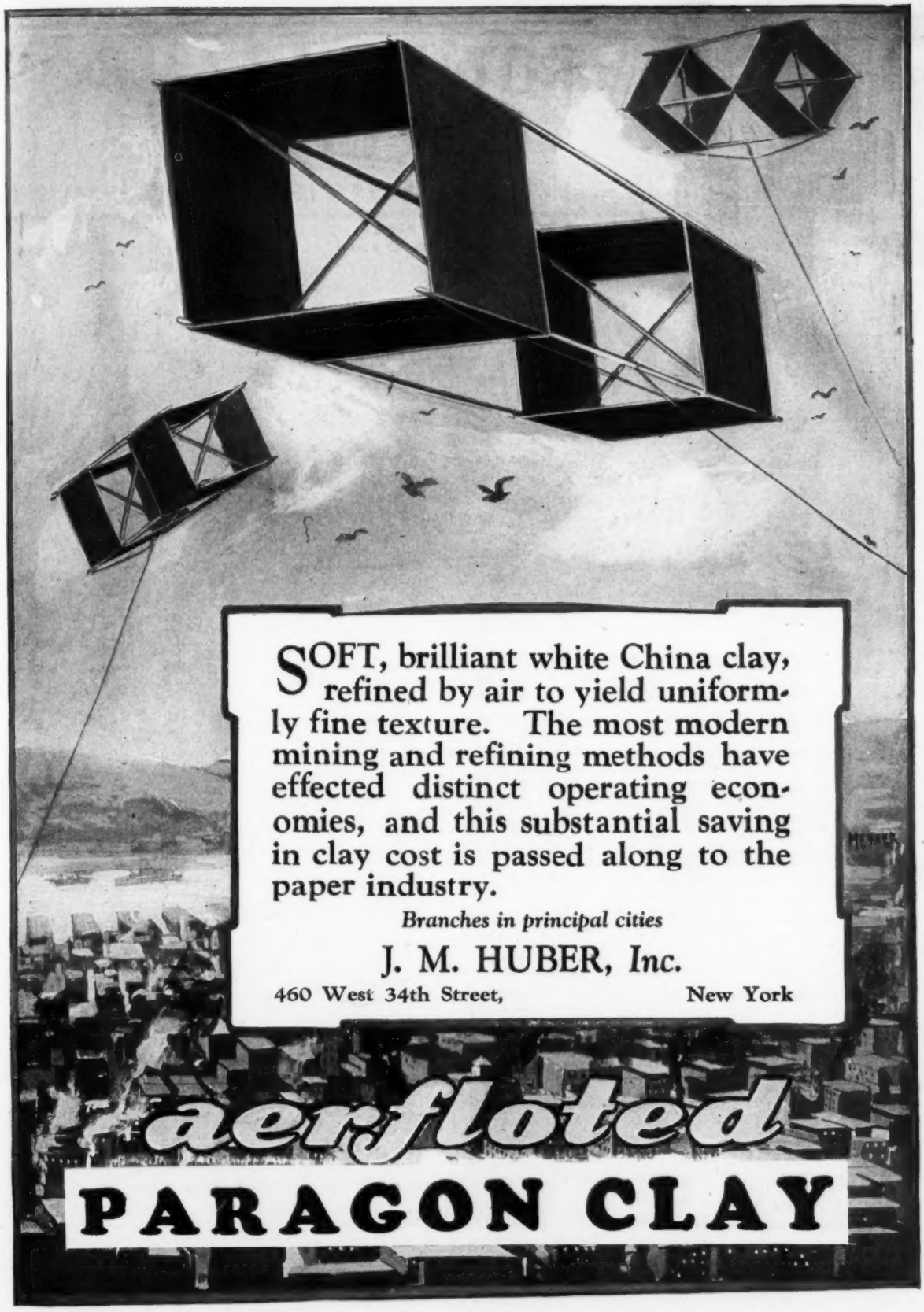
Chicago, Ill.—The Gummed Paper Products Corporation, 141 West Austin avenue, recently incorporated by Louis and Roy E. Klaas, and associates, with capital of $10,000, is said to be planning the early operation of a local plant.

Baltimore, Md.—The Baltimore Salesbook Company, 3132 Frederick avenue, manufacturer of commercial paper products, has plans maturing for a new two-story plant unit on adjoining site, brick and steel type, reported to cost close to $20,000, with equipment. It is understood that work will be placed in progress at an early date.

Indianapolis, Ind.—The Inland Box Corporation, 700 West Morris street, Indianapolis, has concluded negotiations for the purchase of the Gardner-Harvey Container Company, Middletown, Ohio, and has formed a new corporation to be known as the Inland Container Corporation, with capital of $2,500,000, to take over and consolidate the two properties. Both companies specialize in the manufacture of corrugated fiberboard containers, folding boxboard products, etc., and plans are maturing for an expansion program at both plants, including the installation of corrugating paper machines and auxiliary equipment. The Indianapolis plant, to be known as Plant No. 1, has a present rated output of 20 carloads per day, and this will be increased to close to 50 carloads daily; the Middletown mill, to be known as Plant No. 2, has a current output of about 10 carloads a day, and this will be enlarged to close to 40 carloads daily. The entire development is reported to cost more than $200,000. Both plants are running on a capacity schedule with night working forces and will be continued on that basis. H. C. Krannert, heretofore president of the Inland Box Corporation, will be president and treasurer of the new corporation, while E. T. Gardner, previously president of the Gardner-Harvey Company, will be vice-president. George E. Bomberger will be company engineer.

Boston, Mass.—The Nobrak Fibre Products Corporation, recently organized with a capital of 5,000 shares of stock, no par value, is said to be planning the early operation of a local plant. William G. Thayer is president, and G. Woodhull Miller, 78 Abbott road, Wellesley, Mass., is treasurer and company representative.

Los Angeles, Cal.—The Hollywood Paper Box Corporation is running on a normal production schedule with full working force and will continue on this basis for an indefinite period. The company had a marked gain in production and sales during the past year, and expects a corresponding increase during the coming twelve months. C. B. Kerr is president.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POWER PLANT SECTION

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Air Heaters Dominate in Heat Reclamation

Fuel Economizers Outnumbered 3 to 2

A survey of practices in heat reclamation from flue gases as conducted in a quite considerable number of the more recent so-called high pressure steam plants, *i. e.*, power plants generating steam at pressures in excess of 300 pounds per square inch, discloses the fact that in

23.4 per cent., both fuel economizers and air heaters are employed,

36.3 per cent., air heaters and no fuel economizers are employed,

13.8 per cent., fuel economizers and no air heaters are employed,

26.5 per cent., neither fuel economizers nor air heaters are employed.

That is to say, in virtually 60 per cent of the new pulp and paper mill power plants air heaters are employed, either alone or in combination with fuel economizers, for the purpose of salvaging valuable heat which would otherwise be dissipated and lost up the stacks. The surprising situation, in view of the methods of flue heat reclamation as practiced and approved only a few years back, is that the plants which employ air heaters exclusively for reclaiming the heat are very nearly three times as numerous as the plants which depend upon fuel economizers alone for such service, while the number of new plants employing both air heaters and fuel economizers is just about the same as the number employing neither, such number, incidentally, representing substantially a mean in respect to the number ot plants depending exclusively upon one of the respective heat salvaging devices.

Not only is this situation very different from that which existed until relatively recently, but it also differs from that which is held in many quarters to be representative of advanced methods in boiler plant operation. In fact, it would seem as if it actually contradicted the generally accepted contention that the modern trend in boiler plant operation is toward the use of boilers with either integral or unit type economizes, of somewhat similar capacity than formerly used, with the addition of an air heater *i. e.*, a combination arrangement of both fuel economizers and air heaters. Furthermore, the fact that the very many boilers now provided with only air heaters for flue reclamation operate at and over such a wide range of steam pressures would seem to discredit to a considerable extent the claim often made that the advisable preponderance of air heater capacity should increase with the boiler pressure.

Cause and Effect

It is not difficult to discover a cause, or to advance reasons, for this quite striking change in practices and for the apparent conflict between anticipations and realizations, for the reasons are naturally a direct outcome of the market developments in power plant operation during recent years. The cause, in fact, is the logical result of several and seemingly unrelated developments in both steam generation and utilization, the two most influential being concerned, doubtless, with the introduction of multi-stage steam turbine power units and with the combustion of coal in pulverized form.

The chief service rendered heretofore by fuel economizers has been in connection with the heating of boiler feed water, salvaging and returning to the boiler such heat reclaimed as was carried past the heating surfaces of the boiler unit. With the advent of the efficient and economical steam turbine power plant, employing multi-stage turbines, however, the accepted practice in feed water heating has become one in which steam bled from certain turbine stages is largely utilized. Such practice, moreover, has proved not only more advantageous in maintaining an economical heat balance, but in minimizing apparatus cost.

With three- or four-stage bleeding, the feed water temperature may be elevated to 300, 350 or more degrees in the highest stage bleeder heater, leaving any attainable further temperature increase, by passing such hot water through an economizer, altogether inadequate to justify the expense entailed for the economizer and the added plant complication incurred by the installation of such a heat reclaimer. In fact, the flue gases entering the economizer, or rather leaving the furnace, are at only relativley slightly higher temperature than the steam bled for feed water heating, so where a bleeder system of feed water heating is installed, a practice which is becoming more and more general, the economizer actually lacks the ability to function as an effective or economical feed water heater. The temperature differential is not sufficient to justify the investment in an economizer in many cases.

The part played in bringing about such a general use of air heaters by the developments of modern systems of pulverized coal firing is not quite so apparent, possibly, but it has been a contributory factor nevertheless. That preheated combustion air improves boiler efficiency, increases steaming capacity and effects substantial fuel economies is generally appreciated, of course, but in connection with the successful pulverized coal firing systems heated air is virtually essential for the proper combustion of the fuel, as primary air introduced into the furnace with the fuel and also as secondary air introduced around the burners to increase turbulence and support combustion. With the wide introduction of powdered coal installations, with their demonstrations of the value of preheated combustion air, the natural movement has been to supply stoker fired furnaces with heated combustion air also and, in both systems of combustion, the benefits have been marked. Ignition has been accelerated and the more complete combustion

Money to burn

There is a great difference between low-cost lubrication and low-cost lubricants. Low-cost lubrication is *effective lubrication*—reduced depreciation, economy in lubricant consumption and lower power costs. The use of anything less than the *one* effective lubricant for any given set of conditions is like burning money in the bearings. That's the risk of price buying.

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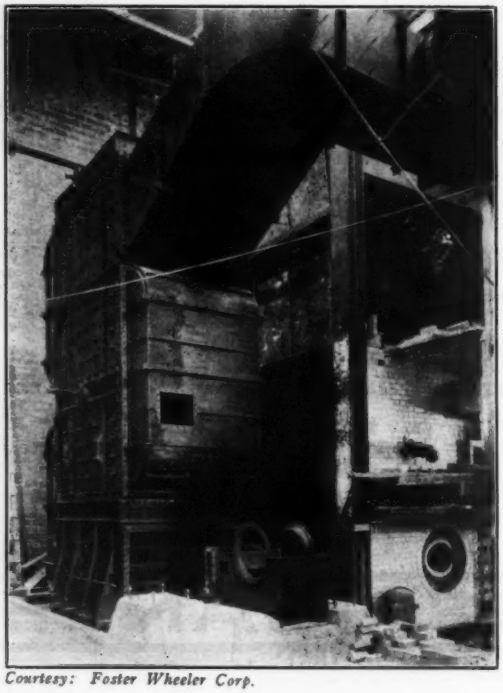
resulting has been very noticeable, less combustible escaping with the ashes, less excess air being required and higher carbon dioxide content being apparent in the flue gases.

The somewhat higher furnace temperature resulting stimulates steaming and presents no obstacles so far as modern furnace and boiler constructions are concerned. Dependence on air or water cooling of furnace walls, water screens, radiant type superheaters or on the method of drawing the preheated air forward through horizontal ducts in the side furnace walls and discharging through front wall openings may, one or all, be entailed, but these are simply accepted refinements in modern boiler plants. The extent to which wall cooling should be carried will depend to a certain degree upon the type of fuel burning equipment, rate of combustion and the fusing point of the ash, obviously, and may be high or low. In fact, there are numerous boiler plant installations employing highly preheated combustion air quite successfully which have required little or no wall cooling provisions. On the other hand, there are also many other installations where effective wall cooling proves a very essential consideration.

The efficiency of heat transfer also favors the reclamation of flue heat by the air heater, rather than by the economizer, in modern high-pressure plants, for with the boiler feed supply elevated to a relatively high temperature before passing through the economizer the effective temperature differential is sharply limited. With air as the heat reclaiming medium, on the other hand, the air supply being rarely at an initial temperature of



Courtesy: Foster Wheeler Corp.

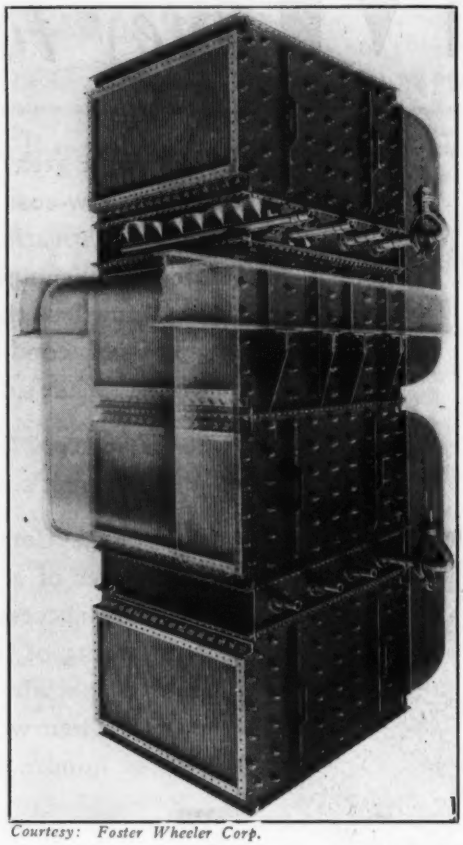
FIG. 1.

Sectional view of recuperative (plate) type air heater. Gases travel vertically, while air travels horizontally, reversing direction in each successive section.

70 or 80 degrees, and adequate air heater capacity, the air can be elevated to as high as 600 degrees in some instances, a differential temperature range of several hundred degrees Fahrenheit in any case and possibly over 500 degrees. Such range compares with an effective temperature differential for economizers under the conditions now rapidly becoming customary of only a minor fraction of such amount. Also, the much lower specific heat of air is a contributory factor, so that where an elevation in feed water temperature of from 10 to 12 degrees is necessary to effect a betterment of 1 per cent in boiler efficiency, an elevation of 35 to 40 degrees (generally accepted values believed to be quite high) in combustion air supply temperature will suffice to effect a corresponding improvement in boiler efficiency.

Types of Air Heaters

These distinctly serviceable and economical heat reclaimers, by which as much as 70 per cent of the stock heat can be recovered and returned to the furnace, enabling the normal steaming rate of the boiler to be attained and maintained with a saving in fuel consumption of anywhere from 7 to 14 per cent; effecting an increase in steaming capacity of from 10 to 15 per cent for periods of heavy demands and to meet peak requirements and bettering boiler efficiencies from 4 per cent upward, are of two general varieties. One type employs a recuperative principle of heat reclamation and the other a regenerative. Both types are now so generally familiar, however, that no detailed descriptions really need be presented. Nevertheless, a few very general remarks and brief references to one or two specific installations of each type, as applied to pulp and paper mill services, will well serve to demonstrate the high economic value of such devices under the present day conditions of keen trade competition, where every possible economy is of truly prime importance.



Courtesy: Foster Wheeler Corp.

FIG. 2.

Typical four-section recuperative (plate) type air heater (9,380 sq. ft. heating surface) erected in paper mill plant.

Gas temperatures	Air temperatures
Entering heater, 550 deg. F.	Entering heater, 70 deg. F.
Leaving heater, 307.	Leaving heater, 394.

The recuperative type air heaters are either of the plate or tubular variety, incorporating no moving parts, in which the products of combustion and the air supply percolate through adjacent passages separated from one another simply by relatively thin plate or tube shell partitions. They are usually built up in box-like sections of considerable size, arranged to conform to

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the space available for their accommodation. Ordinarily the hot flue gases enter at the bottom of the heater and pass more or less vertically upward, though occasionally the direction of gas flow is reversed, the hot gases entering at the top and leaving at the bottom of the heater. The air flow in these recuperative type heaters is usually across the directional path of the flue gases in opposite directions in adjacent box sections, in the same direction in alternate sections, the air supply entering first that section of the heater assemblage from which the flue gases are discharged and leaving the heater at the section at which the hot gases enter, a counter-current arrangement conducive to the most efficient heating of the air and effective cooling of the flue gases.

The heat reclaiming capacity of these devices is dependent upon the number of individual sections incorporated in a complete heater, for the more extensive the gas passage the more nearly the two mediums attain a common temperature, *i. e.,* the more heat is released by the flue gases and absorbed by the combustion air supply. To secure adequate heat transfer, consequently, these air heaters assume very large proportions, as may readily be judged from the heaters composed of only a few sections illustrated. Installations of similar heaters with as many as sixteen sections have been made.

The use of these air heaters neither entails nor prohibits the use of fuel economizers, for while there are considerably more installations of air heaters in pulp and paper mill services where economizers are not used than where both these forms of flue heat reclaimers are employed, there are numerous installations where dependence is placed on both. For example, at the Wisconsin Rapids plant of the Consolidated Water Power & Paper Company both air heaters and fuel economizers are made use of in reclaiming flue heat. Incidentally, the heating area of the air heater reclaimers is about three times as great as that of the fuel economizers. At the plants of the Howard Smith Paper Mills, Ltd., Cornwall, Ont., and of the Minnesota & Ontario Paper Company, International Falls, Minn. on the other and simply to mention a couple of installations, fuel economizers are not employed, the flue heat reclamation being effected solely by voluminous air heaters.

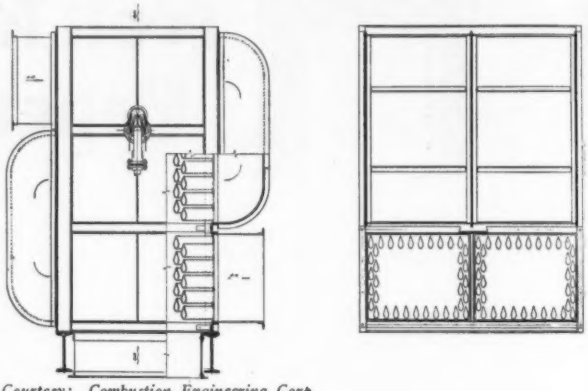
An extremely interesting installation of recuperative type air heaters, of the tubular variety, is at the plant recently erected by the Southeastern Production Company for the paper mill of the International Paper Company at Mobile, Ala. Here, also, the reclamation of flue heat is effected solely by the preheating of the combustion air supply, the tubular air heaters having a total heating area of close to 7,000 square feet and discharging air to the underside of the underfeed stokers at a temperature of 325 degrees. The temperature attained by the feed water supply, utilizing the hot mill-condensate returns, deareating open heaters, condensate from feed water heaters and closed heaters served by steam extracted from the main steam turbine, is even higher, being elevated to approximately 360 degrees in the high-stage heater.

Regenerative Air Heaters

In the regenerative type of air heaters, which, incidentally, need be only about a quarter as large so far as space occupied by the heating elements is concerned and about half in total volume and weight for like heat reclamation capacity, the principle employed is that of alternate heating and cooling of the transfer (heating) elements in separate sections of the heater. These transfer elements, made up of corrugated steel sheets alternating with undulated steel sheets, are assembled to fill sector-shaped cells in a slow moving rotor compartment, the rotor carrying the mass of honeycombed metal successively through the individual paths of both the hot flue gases and the combustion air supply. In the heated path, or hot section, the high temperature flue gases sharply elevate the temperature of the heating elements as they pass through the porous mass, while in the cold section the heating elements give up the heat they absorbed in the hot section and elevate the temperature of the combustion air supply. The rotor section, made up of the heating elements, moves continuously through the respective paths of the flue gases and the air supply, taking up heat in the one and surrendering it in the other. This regenerative cycle is so efficiently carried on that as much as 70 per cent of the flue heat has been transferred in this manner to the combustion air supply.

In a case where the stack temperature might be reduced from 650 degrees to 300 degrees by such heat reclaimer, the stack losses would be reduced from about 15.5 per cent to 6 per cent and the heat thus salvaged returned to the furnace. This would represent a heat reclamation of 61.3 per cent, or under ordinary cicumstances sufficient to elevate the boiler efficiency from say 75 per cent to 84.5. Such improvement would effect a saving in fuel consumption of about 11 per cent, which for the ordinary plant would mean a saving of $3.38 per horsepower-year developed for each dollar commanded per ton of fuel. That is, if the fuel commanded a price of $3.75 per ton as fired, the net annual saving would amount to $12.75 per developed horsepower-year.

At the Covington (W. Va.) plant of the West Virginia Pulp & Paper Company, four boilers customarily operating at 250 per cent of rating and generating steam at 425 pounds pressure with 190 degrees superheat, the normal capacity of each boiler being



Courtesy: Combustion Engineering Corp.

FIG. 3.

Diagrammatic layout of recuperative (tubular) air heater. Gases travel vertically, while air travels horizontally through section tubes, reversing direction in each successive section.

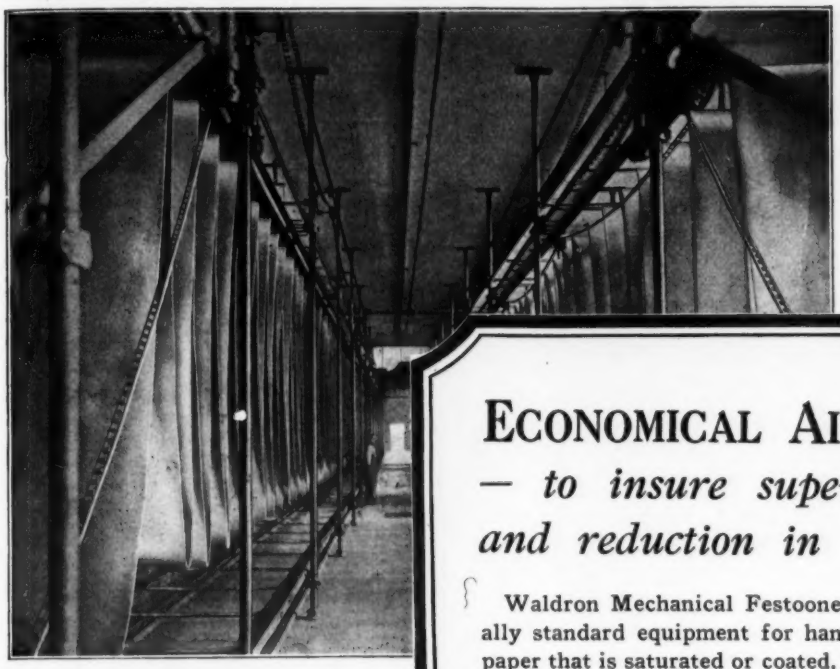
70,000 pounds of steam per hour, employ these regenerative type air heaters. A small fuel economizer is also used, extracting from 100 to 150 degrees of heat from the flue gases before they enter the air heater. However, the gases reach the air heater at a temperature of about 650 degrees, which supplies an ample temperature differential for the heaters to furnish the necessary volume of combustion air at a very respectable temperature.

A similar air heater serves the 1,000-horsepower boiler at the plant of the Fitchburg Paper Company, Fitchburg, Mass., where the normal operating conditions are superheated steam at 250-pound pressure with the boiler driven at about 200 per cent of rating. The boiler efficiency is reported as being increased from 78 to 86 per cent and a fuel saving of 9.3 per cent effected with the air heater in operation.

Very substantial economies are also realized at a plant of the Union Bag and Paper Corporation where wet wood refuse is burned under water tube boilers. These particular boilers are normally operated at between 225 and 250 per cent of rating and the flue gases, no economizer being employed, enter the air heaters at a temperature between 585 and 620 degrees. A heat transfer from flue gases to combustion air, reducing the flue gas temperature some 300 degrees, is effected in the air heater, salvaging from 48.5 to 51 per cent of the flue heat. A considerable portion of this reclaimed heat is utilized, incidentally, in thoroughly drying out the wood fuel.

Burning Wet Fuel

This latter installation is of particular interest, furthermore,



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— to insure superior finish and reduction in labor costs

Waldron Mechanical Festooners are now practically standard equipment for handling all classes of paper that is saturated or coated. These machines are particularly valuable where color is used in processing. They insure perfect uniformity of tints and shades, preventing changes in color due to temperature conditions.

Fully as great as the improvement in finished product that is assured, is the saving that results from installation of Waldron Festooning Equipment. Labor saving alone has equalled in many cases, the entire cost of the installation within a few months. The saving in floor space is another important item to be considered.

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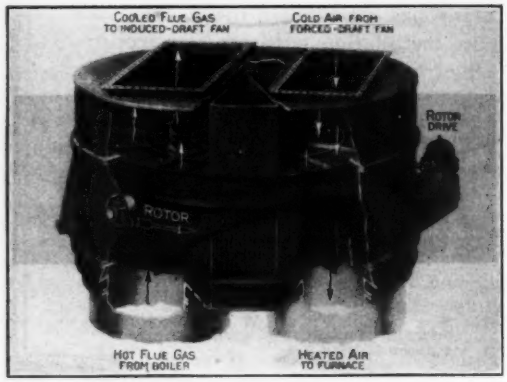
Variety	C	H	N	O	Ash	B.t.u. per lb.
Pine	50.31	6.20	0.04	43.08	0.37	9,153
Fir	50.36	5.92	.05	43.39	.28	9,063
Beech	49.06	6.11	.09	44.17	.57	8,591
Birch	48.88	6.06	.10	44.67	.29	8,586
Elm	48.99	6.20	.06	44.25	.50	8,510
Ash	49.18	6.27	.07	43.91	.57	8,480
Oak	50.16	6.02	.09	43.36	.37	8,316
Willow	49.96	5.96	.96	39.56	3.37	7,926
Poplar	49.37	6.21	.96	41.60	1.86	7,834

for the reason that it is indicative, at least, of the value of preheated combustion air when burning wet fuel. Such fuel in the form of green wood, bagasse, saw and paper mill refuse, peat, etc., can frequently be burned effectively and to good advantage when employing preheated air, which otherwise might burn only with considerable difficulty and with the liberation of little usable heat. In at least one case on record, where a boiler was fired on wet bagasse, the installation of an efficient air heater for raising the temperature of the combustion air supply brought about such marked improvements in combustion conditions that the use of considerable quantities of oil previously burned with the bagasse, to ignite the wet refuse and maintain combustion, was entirely eliminated. The bagasse with an adequate supply of well heated combustion air burned even more satisfactorily than when the combustion air supply was unheated and oil had to be added to the bagasse.

Demonstrating even more conclusively the high value of preheated air for burning wet timber waste, dry wood being an excellent fuel, admittedly, of good calorific value, are the findings made some years ago by The Steam Boiler Association of Central and Northern Sweden when conducting tests on a water tube built in this country and installed in a plant at Lugnvik, Sweden. The pertinent statistics compiled at that time are given in the accompanying table, from which it will be noted that even though the fuel burned during the period with the air heater in operation actually contained nearly 10 per cent more moisture than the fuel burned during the run without the use of preheated combustion air investigated the day before, combustion was noticeably



Courtesy: The Air Preheater Corp.

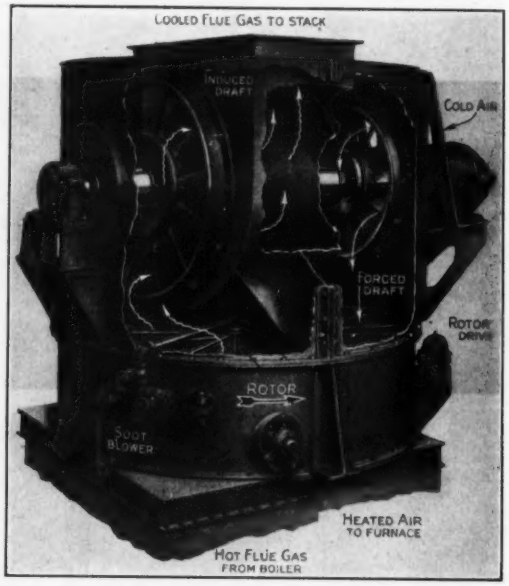
FIG. 4.

Regenerative type air heater, arrows indicating direction of gas and air flow.

stimulated by placing the air heater in service, the rate of steaming was increased, less excess air was required, the boiler efficiency was elevated better than 20 per cent and there was a saving of a sixth in fuel consumption, 16.7 per cent.

It is achievements such as these which blaze the way for substantial economies in the conduct of pulp and paper mills, by pointing out opportunities to conserve fuel, stimulate combustion, elevate steaming rates and boiler capacities and of effecting other direct and indirect betterments in furnace and boiler operation, all of which, individually and collectively, tend to reduce steam and production costs. The reclamation of flue heat by economizers and air heaters, particularly the latter; since nowadays the desirable high temperature of the boiler feed water supply can be more effectively secured by the use of steam bled from turbine stages, the reclamation of hot mill-condensate returns, salvaging the condensate drained from all feed-water heaters, etc.; constitutes a major economy, in fact, and one attainable without entailing any considerable new capital investment.

In plants where stage-bleeding is not a practical means of heating the boiler feed water supply, economizers can also be used



Courtesy: The Air Preheater Corp.

FIG. 5.

Regenerative type air heater incorporating integral induced draft fan for gases, forced draft fan for air and a soot blower section for removal of soot and fly ash.

to advantage, notwithstanding the fact that for a given recovery of heat from the flue gases their cost is considerably greater than for air heaters of the required capacity. Economizers, it should be appreciated, operate under relatively high pressure and of necessity are considerably heavier and more expensive, while air heaters operate under little or no pressure. Consequently, whether economizers are utilized or not, an air heater installation can be counted upon for a very attractive return on the investment entailed.

REPORT OF TEST ON WATER TUBE BOILER[1] AT THE BJORKA AKTIEBOLAG MILLS, LUGNVIK

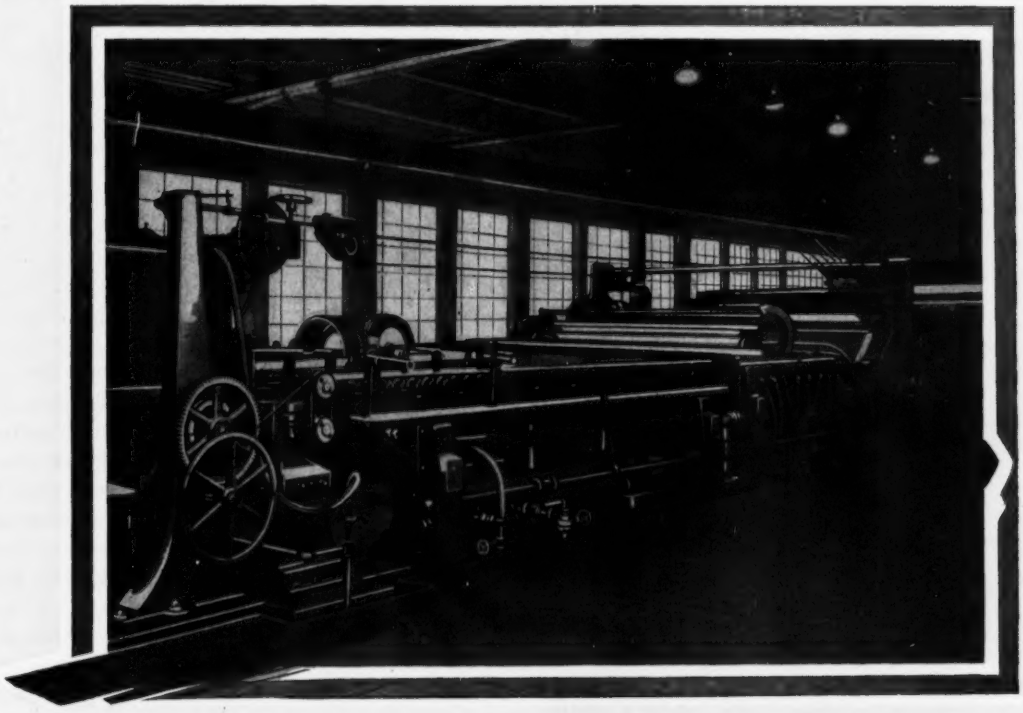
The Steam Boiler Association of Central and Northern Sweden

Heating surface of boiler ..... 1,949 sq. ft.
Heating surface, superheater ..... 619 sq. ft.
Grate area ..... 58.9 sq. ft.
Class of fuel ..... Timber waste
Type of grate ..... Horizontal self feeding

	Without air heater	With air heater
Water content of fuel (per cent)	45.8	49.1
Effective calorific value of fuel (B.t.u. per pound)	3,964	3,693
Fuel consumption (pounds per hour)	5,390	5,511
(pounds per hour per square foot grate)	915	935
Water evaporated (pounds per hour)	11,023	12,720
(pounds per hour per square foot heating surface)	5.66	6.53
Steam pressure (average pounds per square inch)	263.0	263.0
temperature (average degrees F.)	637.7	648.6
Feed water, temperature (average degrees F.)	196.7	198.5
Flue gas, temperature at chimney base (F.)	539.6	568.4
CO_2 content at boiler damper (per cent)	14.62	14.75
Efficiency of boiler (per cent)	60.40	73.00
Saving in fuel (per cent)		16.70
Critical Air Heater Temperatures (deg. F.)		
Flue gases entering heater		552.0
leaving heater		303.8
Air entering heater		82.4
leaving heater		456.8

[1] May 30th and 31st, 1924.

CHAMPION



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That is why Black-Clawson has come to be looked upon as a conservative organization and one that never speaks until it knows what it is talking about or moves until it knows where it is going.

And so, when the Champion Fourdrinier was developed, embodying many advanced features not found elsewhere, the opinion was freely expressed throughout the Industry that the Champion would unquestionably mark a long stride forward in construction and results.

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PAPER TRADE JOURNAL
ESTABLISHED 1872

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Vol. XC New York, January 23, 1930 No. 4

COMING EVENTS

American Paper and Pulp Association, fifty-third Convention and Meeting. Pennsylvania Hotel, February 17-20. Annual Meeting, Thursday, February 20. Annual Banquet, Grand Ball Room, Thursday, February 20.

National Paper Trade Association of the United States. Convention. Pennsylvania Hotel, February 17-19. Theatre Party, "Sons of Guns," Imperial Theatre; Supper-Dance, Hotel Astor, Wednesday, February 19.

Technical Association of the Pulp and Paper Industry. Convention, Pennsylvania Hotel, February 18-20. Luncheon, Thursday, February 20.

Salesmen's Association of the Paper Industry. Annual Meeting, Pennsylvania Hotel, Tuesday, February 18. Luncheon, Tuesday, February 18.

New York Association of Dealers in Paper Mills' Supplies, Annual Banquet, Hotel Commodore, Wednesday, February 19.

Canadian Pulp and Paper Association. Annual Meeting, Pulp and Paper Research Institute, Montreal, January 31. Annual Dinner, Ritz Carlton Hotel, Montreal, January 31. Woodlands Section, Pulp and Paper Research Institute, Montreal, January 27-28. Technical Section, Engineering Institute, Montreal, January 29-30.

FOREST SURVEY OF U. S.

The promotion by the U. S. Forest Service of District Forester C. M. Granger of the Pacific Northwest District to the position of head forest economist in charge of the nation-wide Forest Survey now being launched by the Forest Service, was announced this week by the Department of Agriculture.

The Forest Survey, authorized by the McSweeney-McNary Act of 1928, is one of the biggest undertakings in the development of forestry thus far undertaken. It will be a comprehensive appraisal of existing forest supplies and conditions, growth and requirements, and of present and future trends, all of which, when properly coordinated, will constitute a fundamental and economically sound basis for determining Federal, State, and industrial forest policies and programs. Congress has authorized a Federal contribution of $3,000,000 to the project. A small initial appropriation of $40,000 is available this year.

Success in developing the project will depend upon widespread cooperation with Federal and State and industrial and other private agencies, says the Forest Service. Certain phases of the survey, such as the forest resource inventory and the study of growth, will be handled by the regional forest experiment stations under the general direction of Mr. Granger.

Because of its outstandingly complex and important forest problems, the Pacific Northwest has been selected as the region for the beginning of intensive work. The Pacific Northwest Forest Experiment Station, of which Mr. T. T. Munger is director, has already commenced preliminary work. The study will be extended as rapidly as possible to other forest regions, and will eventually cover the entire United States.

Another step already taken is a canvass, in cooperation with the U. S. Bureau of the Census, of the wood requirements of the wood-using industries, as a part of the present and future wood requirements phase of the survey. Advance cooperative work is also being initiated in the Lake States region.

The Agricultural Appropriation Bill now before Congress carries an increase of $85,000 for the Forest Survey for the next fiscal year. It is planned to use $50,000 of this to expand the work in the Pacific Northwest, $25,000 to initiate intensive work in the Southern hardwood region, and $10,000 for individual assignments.

Mr. Granger is a graduate in forestry of Michigan Agricultural College. He entered the Forest Service in 1907, serving successively as deputy supervisor, supervisor, and assistant district forester in charge of the offices of silviculture and of operation in the Rocky Mountain District. During the World War he served with the 10th Forestry Engineers, attaining the rank of Major. In 1924 he became district forester of the Pacific Northwest District. He will enter his new work with a wide experience in the development of silvicultural policies, management plans, fire protection plans and with a comprehensive understanding of the economic aspects of forestry.

Mr. Granger assumes his new duties immediately, with headquarters temporarily in Portland, Oregon.

The Forest Service also announces the appointment of Horace J. Andrews as senior forest economist, to become regional project leader for the Pacific Northwest. He will assume his duties at the Pacific Northwest Forest Experiment Station this month. Mr. Andrews is a graduate of the University of Michigan and received the M. S. degree in forestry from that institution in 1916. He was formerly employed in the U. S. Forest Service, and later engaged in private forestry work and in teaching at three forest schools. He was closely associated with the development of the Michigan Land Economic Survey, and more recently has been in charge of the divisions of protection and lands in the Michigan Department of Conservation.

A CONSTRUCTIVE FACTOR IN RECOVERY

The comfortable financial condition that most large American corporations enjoy at present should operate as a constructive factor in the recovery from the recent stock market collapse, according to the National City Company, which has just completed a survey and issued a review of it, titled "Five Years of Industrial Finance." The great change in the character of the new financing during the period from fixed interest bearing obligations to preferred and common stocks is traced.

"Of no small consequence in the stock financing of the last year or more," the review reads in part, "was the offering by domestic corporations of additional stock to stockholders through subscription rights which have served to place American business enterprises in an unusually strong financial position. This factor is one of outstanding importance in the present situation.

"It contrasts markedly with the conditions confronting American business on the occasion of the last severe collapse in values in 1920. At that time inventories, generally speaking, were swollen in quantity, and particularly in price, to such an extent that resort was necessary to the investment market for financing on a widespread scale, when conditions affecting that market, to say the least, scarcely favored financing in any large volume."

In commenting on the general investment market, the National City Company says no investment banking organization can successfully forecast fluctuations of either prime investments or equity securities. The primary consideration in selection, it says, must be that the industries chosen promise continued growth and efficient management and that their securities appear likely to benefit from good business and to survive successfully recurring periods of hesitation or depression.

"Over the span of the past five years," according to the review, "American industry has experienced a period of outstanding progress and prosperity. During the preceding decade the World War had interrupted the normal growth of the country and cost it heavily, not only in direct outlay, but in the diversion of productive energies from peace-time to war-time pursuits. The close of the war was followed by a world-wide inflation of currencies and commodity prices that culminated in 1920 with a generally water-logged situation and brought about a year of severe depression in 1921. After the usual interval of stagnation a new period began with a heritage of retarded development in many fields, such, for example, as building construction, which provided the initial basis for a program of marked industrial expansion.

"Impelled by these forces, American industry established new high records of achievement which are vividly reflected in the statistics of production and trade. Reflecting this growth of industrial activity, the profits of industry and the income of the American people likewise increased apace. While the record of leading industries shows a steady enhancement of earning power and a marked strengthening of corporate financial structure, the income of the people as a whole in 1928 exceeded the enormous aggregate of $89,000,000,000, and the tabulations for 1929 will probably reach a higher figure."

Keystone Chemical Co. To Be Sold

[FROM OUR REGULAR CORRESPONDENT]

LOWVILLE, N. Y., January 20, 1930.—Attorneys for the receivers of the Keystone Chemical Company returned this week from a meeting in Buffalo at which future affairs of the firm were discussed. It was announced that the business will not be continued by the receivers and that the entire property will be sold to meet the claims of certificate holders and creditors. The real estate will be sold at a foreclosure sale to satisfy a trust mortgage held by the Exchange National Bank of Olean and Calvin Fentress, of Chicago, Ill., who are the trustees. The mortgage will be closed in a Federal court of the Northern New York district. This procedure will require several weeks and during that time and until the property is taken over by the new company the factories at Glenfield will be closed.

The Keystone Corporation was started a few years ago by the Quinn family of Olean and has been rated as one of the largest wood distillation plants in the world. The company controls a tract of 60,000 acres of hardwood and in addition to erecting a modern mill at Glenfield a railroad 45 miles in length was recently built to facilitate transportation of logs. It is expected that the plant will again be placed in operation following its sale.

Hinde & Dauch Buy David M. Lea & Co.

SANDUSKY, Ohio, January 20, 1930.—President Sidney Frohman, on behalf of the Hinde & Dauch Paper Company of this city, has concluded negotiations for the purchase of the corrugated fiber plant, facilities and business of David M. Lea & Co., Inc., of Richmond, Va. Deal for the purchase of the Virginia concern was completed during the past week.

Mr. Frohman said that steps had already been taken looking toward the amalgamation of the Richmond production and sales organization with those of the 20 other localized and widely distributed mills and factories owned, controlled and operated by his company.

"This new addition," said Mr. Frohman, "gives Hinde & Dauch facilities full coverage in the Atlantic Seaboard states from Maine to South Carolina, inclusive."

The David M. Lea Company is 60 years old and is a pioneer in fiber packaging and the oldest box producer in the entire south. It is known to enjoy an extensive patronage in Virginia and the rapidly developing Carolinas and cannot fail to be a valued member of the Hinde & Dauch family.

As to the necessary reorganization consequent to the acquisition by the Hinde & Dauch Company, Mr. Frohman announced that C. F. Powell, president of the David M. Lea & Co., Inc., will continue in charge as district manager for Hinde & Dauch interests and the entire present personnel will be retained. L. L. Thigpen, heretofore the H. & D. sales representative, becomes district sales manager in charge of the local sales force and reporting to Mr. Powell.

"The requisite preparations are already well advanced," Mr. Frohman said, "and will be completed before the close of the current month in anticipation of the actual transfer which becomes effective on the first of February."

Previous to the acquisition of the Richmond plant, the Hinde & Dauch Paper Company owned and operated 18 mills or factories in the United States and three in Canada, the business in the Dominion being controlled by the Hinde & Dauch Paper Company of Canada, Ltd.

The Hinde & Dauch interests now have six box factories located at Sandusky, Boston, Brooklyn, Philadelphia, Baltimore, Montreal, Toronto, Cleveland, Muncie, Ind., Kansas City, St. Louis and Richmond, Va. These plants are supplied by the company's mills situated at Sandusky, Gloucester, N. J., Watertown, N. Y., Toronto, Trenton, Ont., Delphos, Ohio, Muncie, Ind., Brooklyn, Ind., and Fort Madison, Iowa.

This is the big industry which has grown out of the small rented Sandusky paper mill of over 40 years ago.

Swedish Sulphate Firms to Organize

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 14, 1930.—Representatives of Swedish sulphate manufacturers discussed at a recent meeting, according to reports received here, a plan for forming a selling organization of Swedish sulphate firms. The delegates agreed to establish such an organization and entrusted a committee of five members with the task of carrying out the plan by drafting articles of association. It is hoped that the committee will be able to submit the result of its work at a meeting to be held shortly.

To Be Assistant Manager at San Francisco

SAN FRANCISCO, Cal., January 18, 1930.—The Zellerbach Paper Company has appointed James Igstadter as assistant manager of the San Francisco Division. In addition to these new duties, Mr. Igstadter will continue as director of sales. His long association with the company covering many years, and his thorough knowledge of the paper business, fully qualify him for his new duties.

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PIONEER MANUFACTURERS OF LIQUID CHLORINE

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Central Station Supplies Process Steam and Power to Paper Mill in South

By William G. Allan[1]

The International Paper Company has installed and put into production a new paper mill in the South at Mobile, Alabama. In contrast to practice in the case of several other paper mills, both power and process steam are purchased from the Southeastern Production Company, which is a concern connected with the Alabama Power Company, and the Southeastern Power and Light Company.

To furnish the necessary power as well as the steam it was decided to generate the steam at 475 pounds per square inch with superheat to a total temperature of 650 to 675 deg F., and to utilize part of the heat in the steam to generate power by passing it through a 6000 k.w. General Electric Company double extraction steam turbine. The steam for process work in the paper mill is extracted from intermediate stages on the turbine through grid valves which are automatically controlled and governed to maintain a constant pressure in the extracted steam delivered to the pipe lines which convey it to the paper mill some 700 feet distant. The nominal pressures of the extracted process steam are 150 pounds per square inch and 35 pounds per square inch at the turbine, but these pressures can be adjusted, up or down, to suit conditions in the paper mill and to allow a pressure drop in the pipe lines.

While this new power plant is relatively small, if measured by the number of kilowatts at which its generators are rated, nevertheless it is, even in its intial installment, quite a fair-sized plant due to the large process steam requirements of the adjacent paper mill.

Its importance, however, lies as much as anything in the fact that it represents the faith of the company behind the enterprise in the growing industrial possibilities and importance of this district, equipped as it now is with modern shipping and port facilities, and adjacent to that gateway to the Pacific, the Panama Canal, leading by ocean transit to all markets of the Far East.

Around this new plant, as a nucleus, are expected to grow up chemical industries, artificial ice plants, artificial fertilizer plants, using Florida phosphate rock shipped in by water, coal processing plants and innumerable other industries whose names and products would make too long a list to enumerate in this article.

Steam & Power Requirements

The requirements of the paper company originally called for the delivery to them of 80,000 to 85,000 pounds of steam per hour at 150 pounds per square inch pressure and with not more than 100 deg. F. superheat. Also for 50,000 to 70,000 pounds of steam per hour at 35 pounds per square inch pressure and with a quality not less than 98 per cent. These quantities of steam are liable to considerable variation, not only according to the hourly demand of the paper mill, but there are also likely to be changes in the original plans which will in themselves vary the expected steam requirements.

[1] Engineer, Southeastern Engineering Co., Birmingham, Ala.

The power requirements of a paper mill of the output in question, namely about 100 tons of paper per day, call for about 5000 to 6000 k. w., with the possibility that under emergency conditions, even more power may be required up to 8000 k. w. To meet these requirements a joint supply of power was arranged for by the installation of two turbo-generators and by power supply from the outside system of the Alabama Power Company; thus, reliability and continuity of operations are assured.

One of the two turbo-generators is designed to be such a rated capacity as to be able to supply the paper mill even if the outside power supply should fail, owing to temporary line trouble or other causes. This machine is a high pressure machine exhausting at 5 pounds per square inch back pressure and provided with two-point extraction. It is rated at 6000 k. w., 7500 k. v. a., 80 per cent factor.

After a considerable number of preliminary studies had been made both by the turbine manufacturers and by the engineers of the company, and taking into account a wide variety of possible requirements both for process steam and feedwater heating steam, it was ascertained that the throttle steam consumption of this machine would be about 190,000 pounds per hour. This steam is allotted to the various sections of the turbine as follows:

	Pounds steam per hour
(a) From throttle to first extraction point	190,000
(b) From first to the second extraction points	70,000 to 90,000
(c) From second extraction point to exhaust	20,000 to zero

The three auto-extraction curves, Figs. 2, 3 and 4 show the amount of power generated (as abscissae) for the total quantities of steam to throttle (as ordinates) under varying conditions as to the quantity of extraction and exhaust steam. The three curve sheets

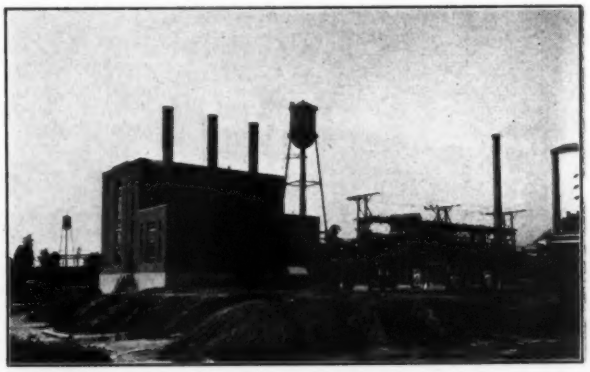

FIG. 1
VIEW OF PLANT, FROM SUBSTATION, LOOKING SOUTH

TAPPI SECTION, PAGE 32

show respectively conditions where the quantity of steam extracted at the low pressure, or 35 pound stage is 50,000, 60,000 and 70,000 pounds per hour. The parallelograms on each curve sheet cover a range of variation from zero exhaust—maximum extraction at the left hand side, to maximum exhaust—minimum extraction at the right hand side. In the other direction of the parallelogram the range of variation of the high pressure or 150 pounds stage is from 50,000 to 100,000 pounds of steam per hour. It will be observed that it is possible by means of such curve-sheets to ascertain very rapidly the amount of power generated by the turbine under a wide variety of conditions of steam flow and steam extraction. The maximum power generated is seen to be just short of 6000 k. w., and the minimum about 2800 k. w. These curve-sheets do not in themselves constitute or take the place of a heat-entropy diagram, but they are of very great usefulness in rapidly ascertaining the amount of power generated by varying quantities of steam passed through and extracted from such a double extraction turbine, and as there are three variables to be plotted as ordinates, it is, of course, not possible to plot these on a single curve-sheet.

As to the heat-entropy curve for such a turbine, this also has to be in the form of three separate curve-sheets, one curve-sheet for each section of the turbine. As it might make this article too long and complicate the presentation of the subject, these heat-entropy curves are not shown.

After leaving the turbine the steam extracted from the two extraction points is conveyed by pipes to the paper mill. These are carried overhead on structural steel towers and open girder work, and are carefully heat insulated with 85 per cent magnesia covering. This whole pipe line and structure is a careful piece of engineering designed to minimize the dangers liable to occur from water-hammer and the loops shown in Figs. 5 and 6 are of course, designed to take care of expansion and contraction.

Calculation of the pressure drop in these pipes for the maximum steam flow expected, showed that with a 10-inch pipe for 150 pounds per square inch steam, the pressure drop would be about 7½ pounds per square inch and with a 12-inch pipe for the 35 pounds per square inch steam, the pressure drop would be about 8 pounds per square inch. As these pressure drops were considered too high, it was ultimately decided to install 12-inch and 14-inch pipe respectively for which the pressure drops are of the order of 5 pounds per square inch or less, for the maximum rates of steam flow which would ever be expected. That these calculations are correct and also, that the size of pipes chosen are justified is borne out by the actual operating data set forth in the table hereunder.

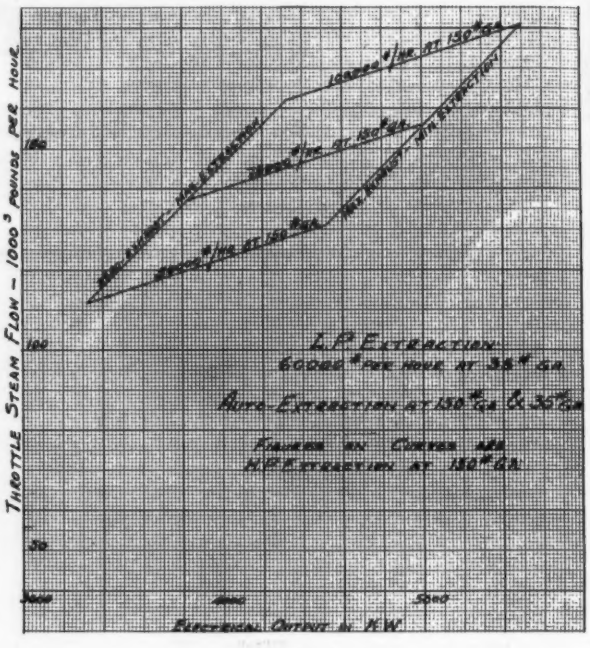
Throttle Steam Flow – 1000's Pounds per Hour
L.P. Extraction
60000 #per hour at 35# Ga.
Auto-Extraction at 150# Ga. & 35# Ga.
Figures on Curves are
H.P. Extraction at 150# Ga.
Electrical Output in K.W.

FIG. 3

TABLE SHOWING STEAM FLOW, PRESSURES, AND PRESSURE DROPS IN PIPE LINE BETWEEN POWER PLANT AND PAPER MILL, MOBILE STEAM PLANT. (PROCESS STEAM DATA.)

Particulars	35 pound extraction steam	150 pound extraction steam
Maximum pressure at turbine in power plant	42 pounds per sq. in.	165 pounds per sq. in.
Maximum pressure at paper mill	40½ pounds per sq. in.	*165 pounds per sq. in.
Steam flow in pounds per hour	40,000	38,000
Pressure drop in pipe line	1½ pounds per sq. in.	*Zero
Minimum pressure at turbine in power plant	38 pounds per sq. in.	150 pounds per sq. in.
Minimum pressure at paper mill	30½ pounds per sq. in.	144 pounds per sq. in.
Steam flow in pounds per hour	79,000	87,000
Pressure drop in pipe line	7½ pounds per sq. in.	*6 pounds per sq. in.

* N. B.—In considering these figures it should be borne in mind that part of the 150 pound process steam is supplied from the bark burning boilers.

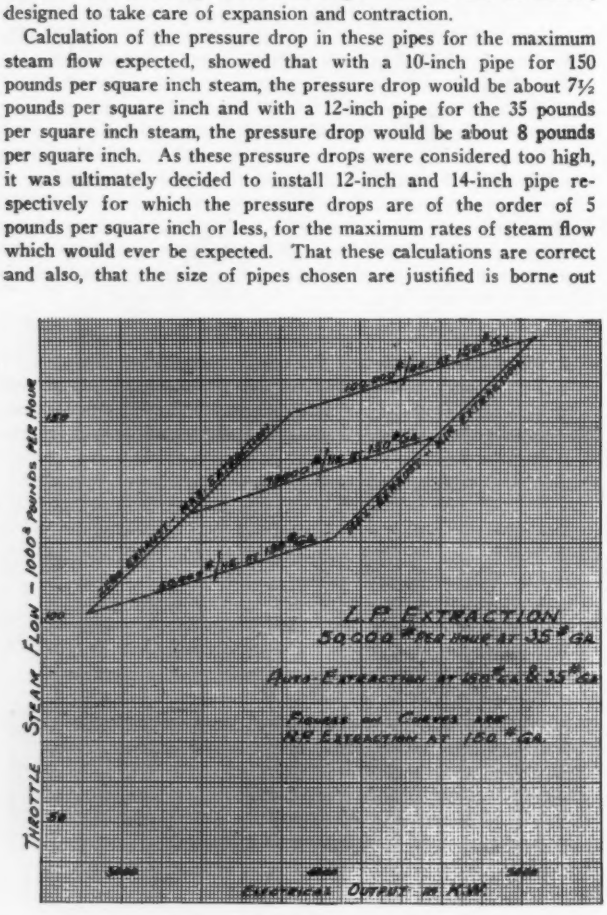
Throttle Steam Flow – 1000's Pounds per Hour
L.P. Extraction
50000 #per hour at 35# Ga.
Auto-Extraction at 150# Ga. & 35# Ga.
Figures on Curves are
H.P. Extraction at 150# Ga.
Electrical Output in K.W.

FIG. 2

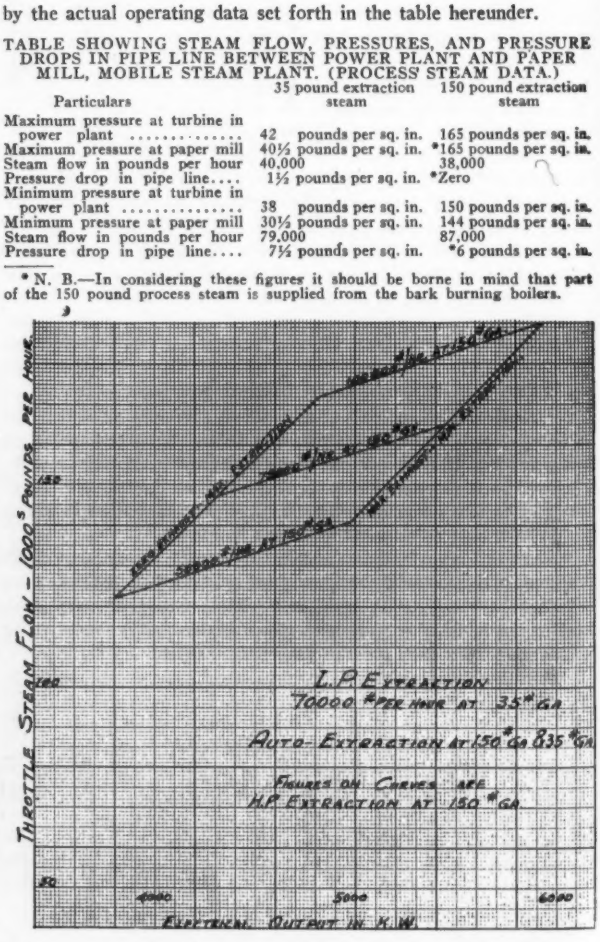
Throttle Steam Flow – 1000's Pounds per Hour
L.P. Extraction
70000 #per hour at 35# Ga.
Auto-Extraction at 150# Ga. & 35# Ga.
Figures on Curves are
H.P. Extraction at 150# Ga.
Electrical Output in K.W.

FIG. 4

As the steam is sold by the production company to the paper company, it must be metered at a location close to the point of delivery, and for this purpose two sets of meters are provided, one set for the higher pressure steam and one set for the lower pressure steam. Each set consists of a Republic steam flow meter equipped with recording and integrating elements, a temperature recorder, and a pressure recorder. These three instruments enable an accurate determination to be made as to the quantity of steam delivered and sold to the paper company. The orifice for the steam flow meter is connected in the pipe line at the nearest point to the meters, and as this orifice has to be designed for specific steam conditions as to temperature and pressure, the other instruments enable the steam flow meter readings to be checked and corrected should the temperature and pressure vary appreciably from the predetermined standard.

These same pipe lines, known respectively as the medium pressure and low pressure process steam pipe lines, can also be supplied with steam from the boilers. The steam at four hundred and seventy-five pounds (gage) boiler pressure and 650 to 675 deg. F., total temperature, can be desuperheated in an Elliott desuperheater and passed through a pressure reducing valve. Both of these apparatus are automatically controlled, the desuperheater being controlled by a thermostatic device operating on the water supply to the desuperheater, and the pressure reducing valve being controlled to maintain a given pressure, namely 150 pounds per square inch on the reduced pressure side of same.

In like manner the 150 pounds pressure steam can be further desuperheated and reduced in pressure by passing it through a second reducing valve and a second Elliott desuperheater, wherein, it is brought down to approximately saturation temperature at 35 pounds gage, and may in emergencies, be fed to the low pressure process steam line. These emergency connections, supplying steam direct from the boilers to the process steam pipe lines, are intended for use only when the 6000 k. w. turbo-generator is shut down for any reason. These desuperheaters and pressure reducing valves, being automatic and adjustable, can be used to a certain extent to adjust the steam condition, as to temperature and quality, at the point of delivery.

According to the most modern practice for steam plants, which are designed to furnish power for some industrial use wherein

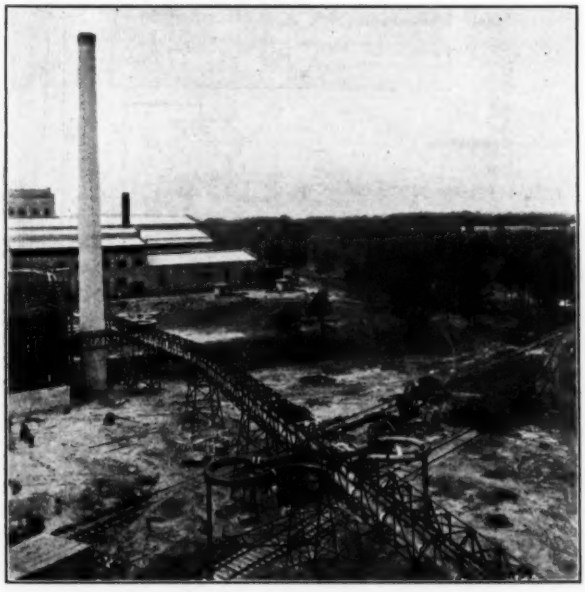

FIG. 5
View of steam lines to International Paper Mill.

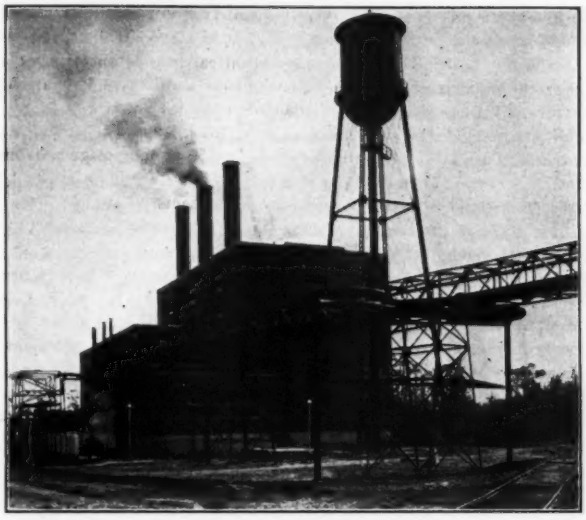

FIG. 6
View of plant, looking East.

the processes of manufacture also require heat, the steam, after passing through the main steam turbine, will not be condensed in a condenser. In this way the heat energy, which would otherwise be lost in the circulating water of the condenser, is usefully employed in the various processes of making paper. The energy efficiency of the steam turbine is very much improved by the omission of the condenser, so that the number of b. t. u. required per k. w. h. produced is reduced to a minimum and the heat energy, still remaining in the steam after it has passed through the turbine, is sold as heat instead of being lost.

Heat Balance Diagram

The accompanying heat balance diagram, Fig. 7, will enable the chief features of the design to be followed, and the first point of interest to be noted is that the make-up water is large in quantity, necessitating the sinking of two artesian wells, whence a supply of reasonably pure water at more or less uniform temperature has been obtained. The large quantity of makeup water is due to the fact that, of the process steam taken by the paper mill, only between 35 and 40 per cent is returned as mill condensate.

The raw makeup or well water is pumped by deep well motor-driven pumps into a 50,000 gallon elevated steel storage tank and thence passes through zeolite softening tanks wherein the encrusting or scale forming magnesium and calcium salts in solution are changed into sodium salts and a certain amount of filtering action is carried out. The treated makeup water is then subjected to further treatment by the addition of chemicals to maintain the correct degree of alkalinity and avoid the possibility of caustic embrittlement in the boilers.

Thence, the makeup water passes into the hot water condensate storage tank where it mixes with the hot mill condensate returns and attains an average temperature of 98 to 113 deg. F. This tank is a large concrete tank buried in the ground just outside the power plant building and holding 25,000 gallons. The supply pipe to this tank is provided with a valve which is float controlled, so as to maintain a constant level in the tank.

Duplicate mill condensate and makeup water pumps take the makeup water from the hot water condensate storage tank and pass it into an Elliott deaerating open heater of 150,000 to 180,000 pounds per hour capacity. In this open heater the water is heated to about 215 deg. F. and is, at the same time, deaerated to remove oxygen which would be a source of corrosion and trouble in the boilers were it not removed. The guarantees call for the removal of oxygen so that not more than 0.04 c. c. per litre remains in the water. Any overflow from the open heater is discharged

through a loop seal and return to the hot water condensate storage tank.

Duplicate boilerfeed pumps, one steam turbine driven and the other motor driven, take the hot makeup water from the open heater and force it into the boilers through a low-stage and a high stage closed feedwater heater. These two closed heaters are heated by steam from the two extraction points on the 6000 k. w. General Electric turbo-generator, and In this connection an interesting problem arose as to the best and most economical means of dealing with the condensate from these two closed heaters. This condensate could have been handled by a pump which would discharge it into the boiler feedwater header against a pressure of 550 pounds per square inch. As the quantity, however, was relatively small, being 50 gallons per minute at normal load and not more than 80 under conditions of extreme load and maximum demand for process steam, sucn a pump, if built for 550 pounds discharge pressure, would have been special, as it was smaller than most standard designs. A triplex plunger might have been installed but this type of pump was not considered very satisfactory for the service in question.

Another method would have been to discharge the condensate from the closed heaters through a drainer into the open heater allowing it to flash into steam. This method, however, would have resulted in a certain amount of loss of thermal head which it was desired to avoid if possible.

A unique method was finally decided on after discussion with the pump makers, and this was to discharge the heater condensate, by means of a single stage centrifugal pump, into the boiler feed pumps at a point intermediate between the first and second stages of the latter where the pressure would be sufficiently high to preclude the possibility of the condensate flashing into steam and vapor-binding the boiler feed pumps. Ordinarily the pressure in a five-stage pump, designed for an end pressure of 550 pounds, would be about 110 pounds between the first and second stages, but for various reasons, including the correct balancing of the impellers on the pump shaft, the design of these boiler feed pumps was so arranged that the pressure between the first and second stages would be about 70 pounds per square inch, corresponding to a saturated steam temperature of 316 deg. F. As the heater condensate temperature is about 281 deg. F., the arrangement precludes the possibility of it flashing into steam in the pumps.

The motor driven condensate drip pump is provided only in a single machine so that for emergency use an alternative method of handling the heater condensate is provided by means of a drainer, thus allowing it to pass into the open heater.

The feedwater leaving the deaerating open heater at about 215 deg. F. (equivalent to say one pound per square inch gage) is thus mixed in the boiler feed pumps with the condensate drained from the feedwater heaters. It will be observed that the temperature of the water leaving these pumps is constant at about 224 deg. F. under varying rates of water flow. The reason for this constant temperature is that the quantity of condensate from the feedwater heaters varies in direct proportion to the quantity of feedwater flowing from the open heater, and as the respective temperatures are 215 and 281 deg. F., the temperature of the mixture will be constant. Any departure from this constant temperature would only occur if the temperature and pressure, under which the open heater was operated should vary slightly up or down.

Feed Water Heaters

The two closed heaters, one low stage and one high stage, are supplied with steam at 35 and 150 pounds pressure respectively, extracted from the 6000 k. w. steam turbine, these being the pressures required for the process steam pipe lines. In other words, the same pressures are used for feedwater heating steam as for process steam.

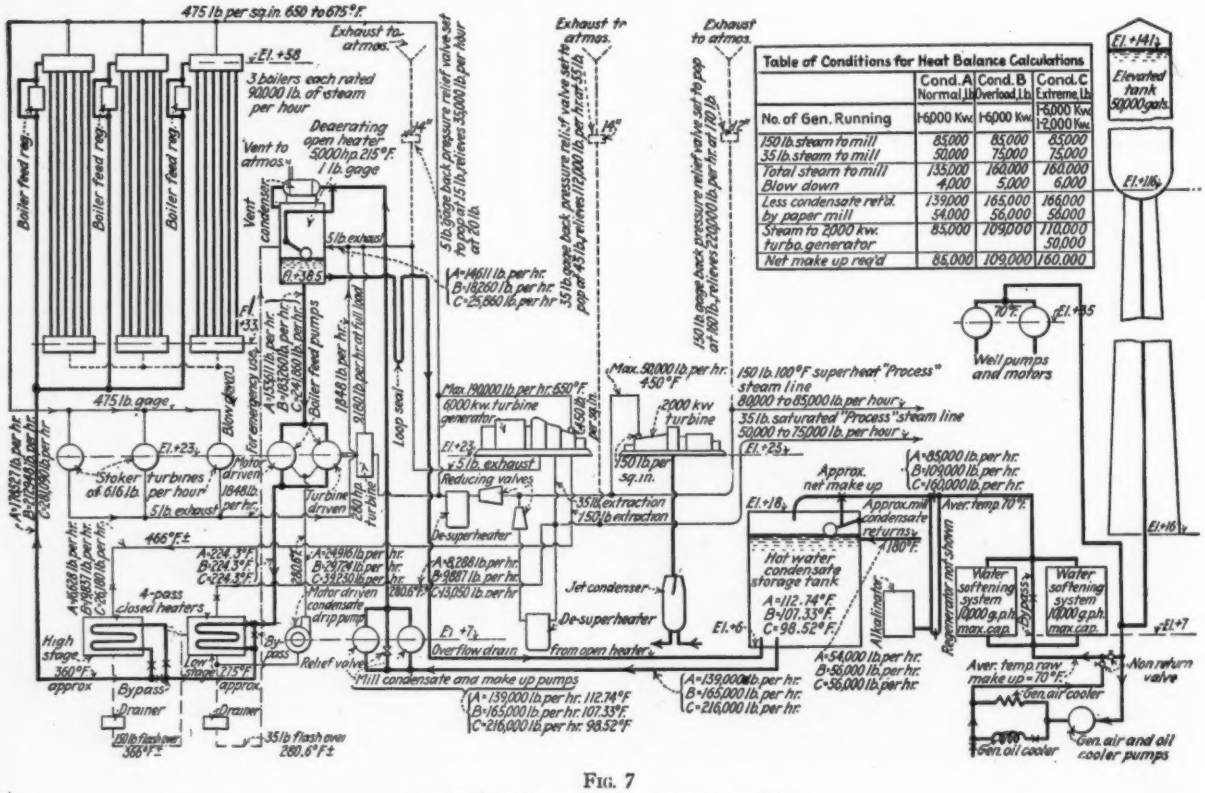

FIG. 7
Heat balance diagram for three operating conditions.

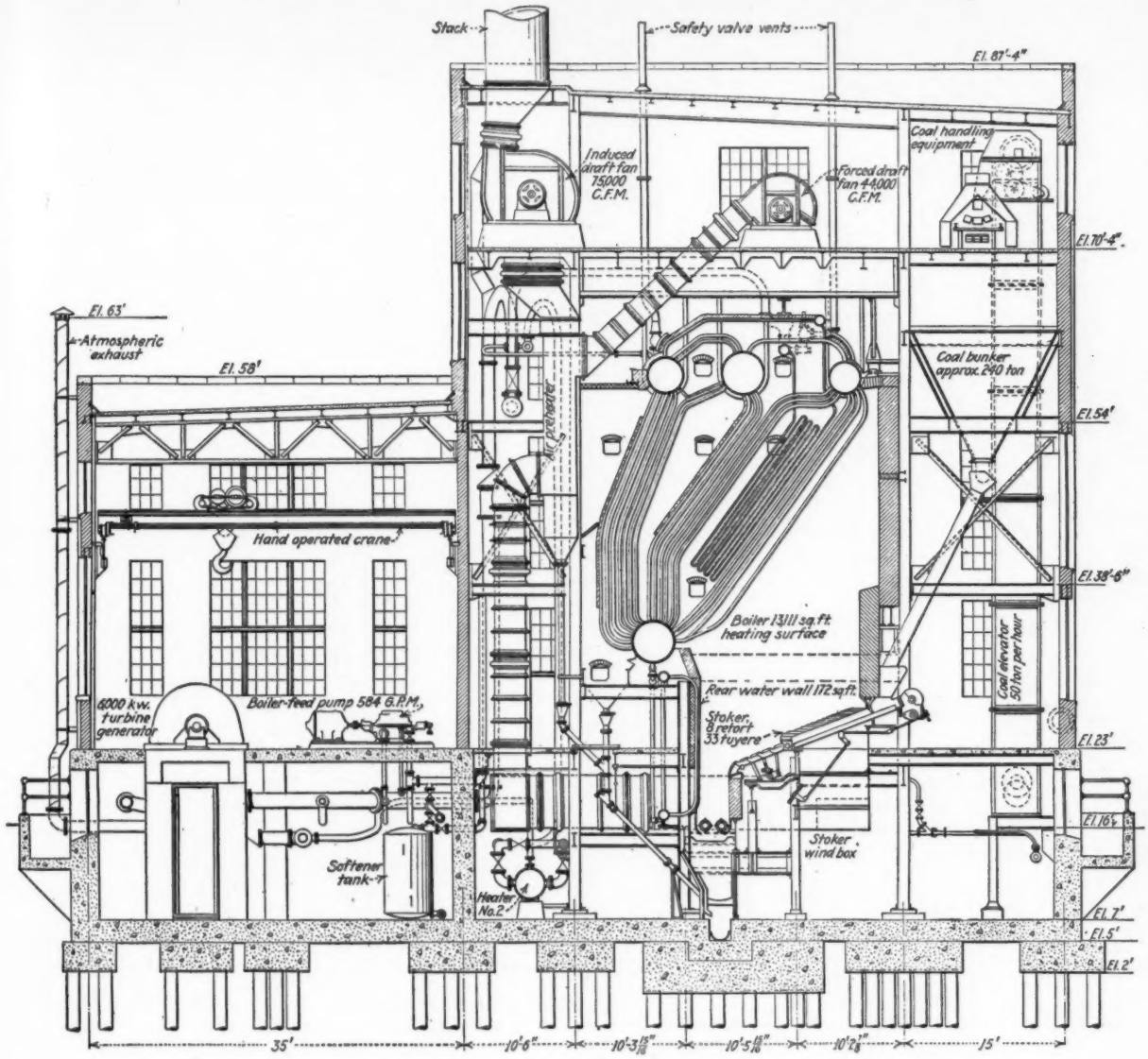

FIG. 8

Elevation showing location of boiler, fans, etc.

In the low stage heater the feed water is raised from 224 to 275 deg. F. approximately, while in the high stage heater it is raised from 275 to 360 deg. F. approximately. These terminal temperatures of the outflowing feedwater are based on a terminal temperature difference of 6 deg. F. between the steam and the water. This terminal temperature difference will vary with the power and process steam load, that is to say, with the quantity of feedwater required to be fed to the boilers. Moreover, as the heating area of the tubes in both heaters was arranged to be equal the actual terminal temperature differences may vary somewhat from the theoretical. This will be so because the rate and velocity of flow of feedwater through both heaters will be identical, but the thermal head between the steam and the inflowing water will be about 85 deg. F. in the case of the high stage heater and only about 51 deg. F. in the case of the low-stage heater.

Both the high and the low stage heaters and the boiler feedwater header are designed and arranged to operate under 550 pounds per square inch water pressure. This allows a maximum differential of 75 pounds between header pressure and boiler pressure. Between the feedwater heater and each boiler there is provided a feedwater regulator of the Swartwout type and make.

Boilers

The boilers are three in number, of the B. & W. Stirling tubular type, each 13,111 square feet heating surface, 1311 h. p. rated to produce 90,000 pounds of steam per hour maximum. Normally, all three boilers will be operated at around two thirds rating or 60,000 pounds of steam per hour each. One boiler may be entirely shut down for cleaning or repairs, and during this time the other two may be raised to full steaming capacity to meet the demand for process steam and power.

These boilers are each equipped with one Westinghouse 8-retort, 33 tuyere multiple retort underfeed stoker equipped with a link grate over feed section and double roll clinker grinders. These stokers and clinker grinders are driven by Westinghouse steam turbines, the exhaust from which is discharged into the open heater. The ashes will be handled by hydrojet ash-sluicing equipment, furnished by the Allen-Sherman-Hoff Company, and supplied with water under 75 pounds per square inch pressure by one or

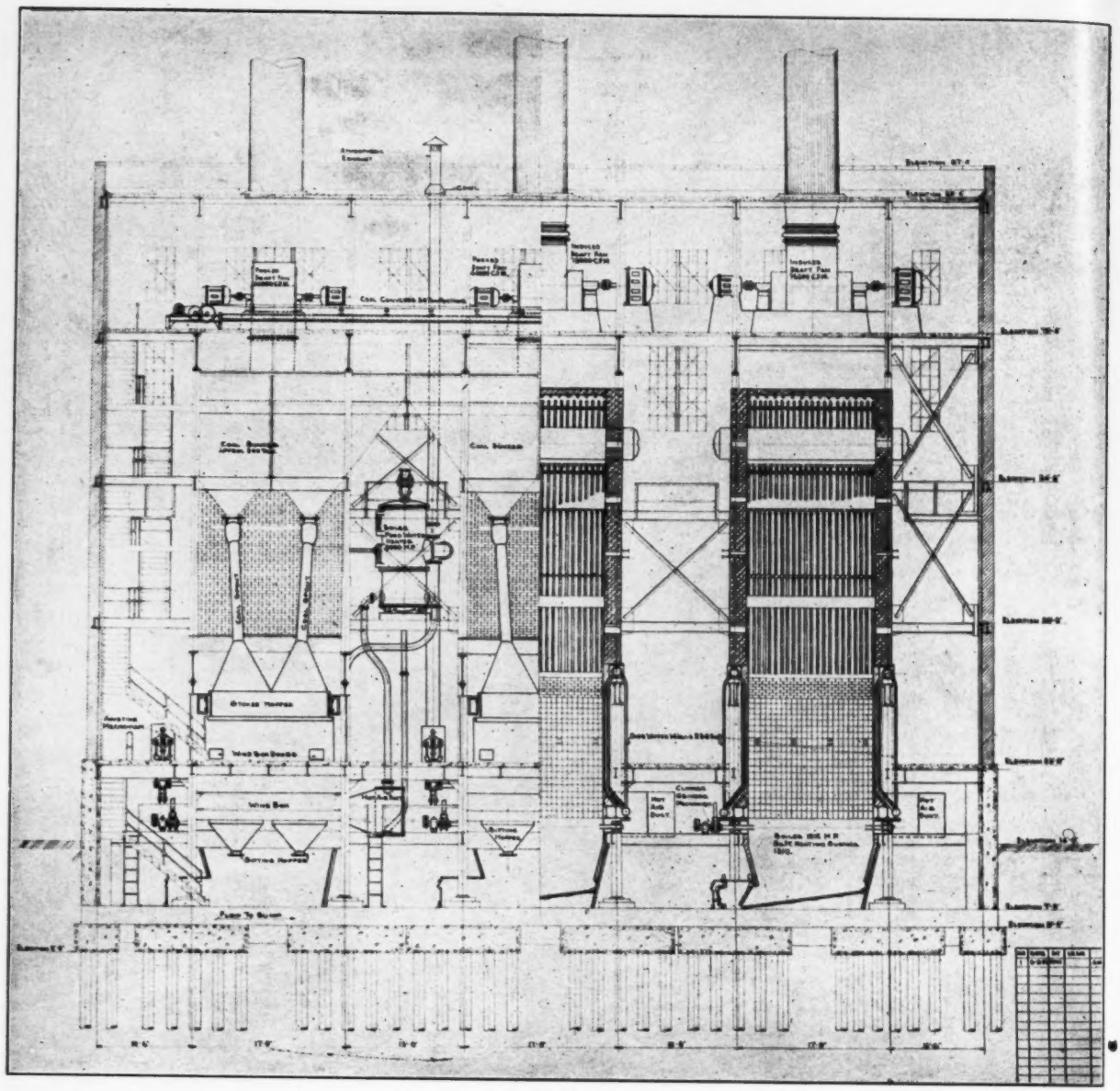

FIG. 9
Longitudinal section through plant.

two Cameron centrifugal pumps, rated at 500 g. p. m. and also further handled by one Cameron centrifugal pump, rated at 1000 g. p. m. at 125 pounds per square inch pressure. The motors driving these pumps are respectively 40 h. p. and 125 h.p., 550 volts, 3-phase, 60 cycles, 1750 r.p.m.

Each Boiler Has Own Induction Draft

Each boiler is likewise provided with its own induced draft and forced draft fan mounted on the top floor of the boiler house. The forced draft fans are rated to deliver 44,000 c.f.m. at 100 deg. F., against a static pressure of 15 inches, and are designed to operate at two speeds, namely 870 r.p.m. when delivering 44,000 c.f.m. and 695 r.p.m. when delivering 33,500 c.f.m. against a static pressure of 10 inches. The induced draft fans are rated to handle 75,000 c.f.m. of hot flue gases at a temperature of 475 deg. F., at a hot static pressure of 6 inches, and are designed to operate at two speeds, namely, 700 r.p.m. when handling 75,000 c.f.m. and 437 r.p.m. when handling 48,000 c.f.m. at a hot static pressure of 3.5 inches and a temperature of 406 deg. F. The two-speed arrangement of these fans is obtained by providing a two-motor drive for each fan and two Francke pin type couplings. The induced draft fans will be driven by motors rated at 200 h.p., 720 r.p.m. (synchronous speed) and 60 h.p., 450 r.p.m. (synchronous speed) 550 volts, 3-phase, 60 cycles. The forced draft fans will be driven by motors rated at 200 h.p., 900 r.p.m. (synchronous speed) and 75 h.p., 720 r.p.m. (synchonous speed) 550 volts, 3-phase, 60 cycles.

Tubular Air Preheaters

No economizers have been installed but B. & W. tubular air preheaters, having a heating surface of 6695 square feet are provided. The air supplied to the undeside of the stokers in the windbox will have a temperature up to 325 deg. F. minimum. The following Table 1. gives the boiler and stoker performance data:

Each boiler discharges its flue gases into a steel stack, each stack being 6 feet in diameter and 30 feet high.

TABLE 1
(BASED ON GUARANTEES)

Evaporation pounds per hr.	Efficiency per cent	Cubic feet air per minute	Windbox static pressure (inches)	Maximum exit gas temp. deg. F.	Minimum windbox air temp. deg. F.
30,000	85.4	10,330	0.7	515	275
45,000	84.0	14,500	1.3	550	295
60,000	84.0	18,600	2.0	585	310
75,000	83.5	23,000	2.7	620	310
90,000	82.2	27,900	3.7	655	325
107,000	79.4	34,000	5.2	700	330

Damper control is provided for ingoing air and outgoing flue gases. Further particulars of the boiler, superheater and air preheater performance and such-like are given below in Table 2.

TABLE 2
(BASED ON GUARANTEES)

Superheater to give 650 degrees total temperature at 60,000 pound rate
Air heater: 22 rows of 31 two and one-half inch tubes, 15 ft. long, spaced 5½ inches center to center in the rows, the rows being 1⅝ inches center to center ..... H. S. 6695 sq. ft.
Underfeed stoker—Westinghouse

Pounds of steam per hour, actual	60,000	90,000
Drum S.V. pressure, pounds per square inch (gage)	475	475
Superheated steam temperature, deg. F.	650	670
CO_2 leaving boiler, per cent	14	15
CO leaving boiler, per cent	0	0
C in dry refuse, per cent	8	15
Loss due to soot, per cent	0	2
Temp. of flue gas leaving boiler, deg. F.	570	640
Temp. of flue gas leaving A.H., deg. F.	378	436
Temp. of water entering boiler, deg. F.	361	351
Temp. of air entering A.H., deg. F.	80	80
Temp. of air leaving A.H., deg. F.	308	324
Efficiency of boiler S.H. and furnace, per cent	78.2	75.0
Efficiency of boiler S.H., A.H. and furnace, per cent	83.2	79.8
Draft loss through boiler, inches of water	.20	.50
Draft loss through A.H., inches of water	.42	.85
Air resistance through A.H., inches of water	.73	1.50
Pounds of flue gas per hour	74,400	106,500
Pounds of air through A.H. per hour	65,900	93,900

COAL ANALYSIS

Carbon	70.05 per cent
Hydrogen	4.65
Sulphur	.71
Oxygen	6.28
Nitrogen	1.62
Moisture	5.00
Ash	11.69
	100.00 per cent

B.t.u. per pound as fired—12,500

Combustion Control System

Combustion contol for the boilers of a very simple type and arrangement has been provided. This was furnished by the Hagan Corporation and comprises a master control, serving to operate all three boilers in synchronism and designed to function from changes in steam pressure in the main steam header. With this arrangement, boiler pressure may vary somewhat, due to pressure drop through dry pipes, steam outlets and non-returns, but the steam header pressure will be maintained at the desired value.

There are in addition, three receiving regulators which actuate the dampers in the induced draft fan ducts and which function by impulses from the master controller.

Likewise, there are three receiving regulators which actuate and control the speed of the stokers, and which also function by impulses from the master controller. These receiving regulators are so arranged that the control operates the governor of the Westinghouse stoker turbine drives.

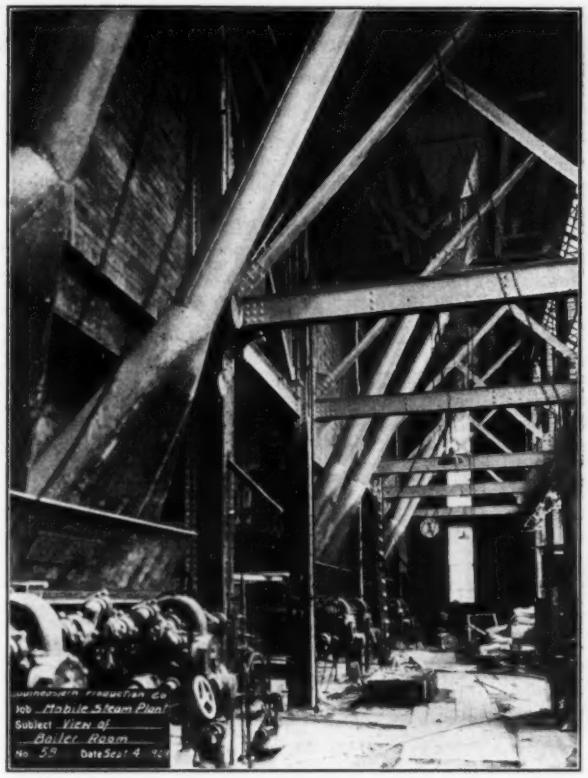

FIG. 10
View of boiler room.

It will be seen, therefore, that by means of the master controller and the receiving regulators actuating the induced draft dampers and the stoker speed, a very close and quick acting control can be maintained on the rate of fuel feed and on the draft, so as to maintain a rate of steam production which will keep the steam pressure in the main steam header constant.

In addition to the above seven controllers there is also one controller in connection with each of the three forced draft dampers which is actuated by impulses from the draft pressure

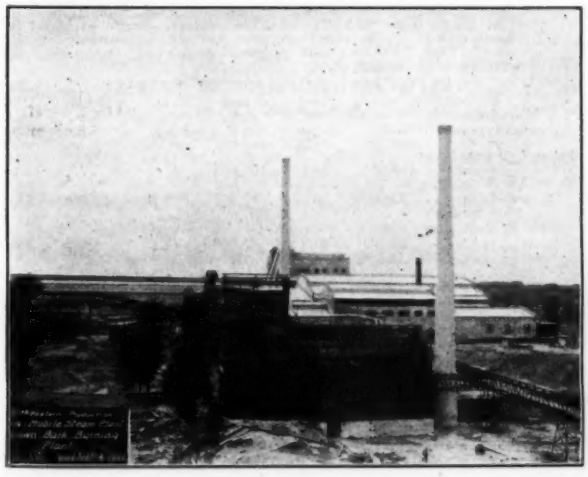

FIG. 11
Bark burning plant.

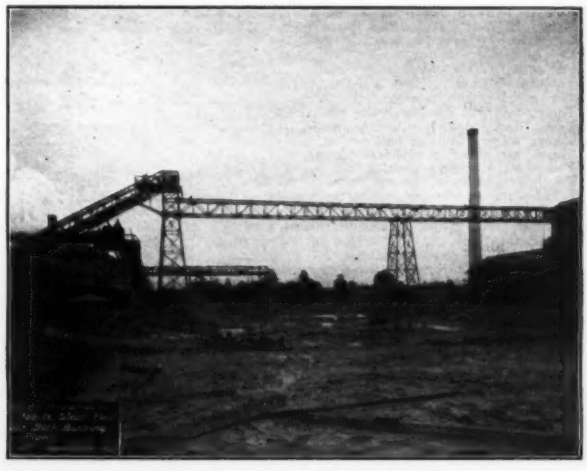

FIG. 12
Bark burning plant.

Principal Equipment in the Plant of the Southeastern Production Co.

Boilers, Superheaters and Air Preheaters

Manufacturer ..... Babcock & Wilcox Co.
Boilers, type ..... Stirling
Number 3
Heating surface, sq. ft., each 13,111
Maximum steam per hour, lb., each 90,000
Gage pressure, lb. 475
Total steam temperature, deg. F. ..... 650 to 675
Air preheaters, type ..... Tubular
Heating surface, sq. ft. 6,695
Temperature of air to underside of stoker, deg. F. 325

Stokers and Clinker Grinders

Manufacturer ..... Westinghouse Elec. & Mfg. Co.
Stokers, type ..... Underfeed
Number of retorts each 8
Number of tuyeres each 33
Type of drive, steam-turbine, exhausting against 5 lb. back pressure and requiring 616 lb. of steam per hr.; clinker-grinder drive the same as that on the stokers.
Furnace water walls ..... Fuller-Lehigh Co.
Exposed water wall surface per boiler, sq. ft. 438
Soot blowers ..... Diamond Power Specialty Corp.
Boiler refractories ..... Harbison-Walker Refractories Co.
Boiler feed-water regulators ..... Swartwout Co.
Pressure, lb. 600
Excess pressure, lb. ..... 10 to 15

Combustion Control

Manufacturer ..... Hagan Corp.
The system consists of a master regulator to actuate three receiving regulators on the induced-draft dampers and three receiving regulators to control the stoker speed. There are also three regulators on the forced-draft dampers actuated by the combustion chamber pressure.

Induced- and Forced-Draft Fans

Manufacturer ..... B. F. Sturtevant Co.
Induced-draft fans, number 3
Number of speeds 2
Capacity, c.f.m. 75,000
Static pressure, in. of water 6
Temperature of gas, deg. 475
Speed, r.p.m. 700
Capacity, c.f.m. 48,000
Pressure, in. of water 3.5
Temperature of gas, deg. 406
Speed, r.p.m. 437
Each fan is driven by a 200-hp., 700-r.p.m. and a 60-hp., 437-r.p.m. 550-volt Westinghouse induction motor.
Forced-draft fans, number 3
Number of speeds 2
Capacity, c.f.m. 44,000
Static pressure, in. of water 15
Temperature, deg. 100
Speed, r.p.m. 870
Capacity, c.f.m. 33,500
Pressure, in. of water 10
Speed, r.p.m. 695
Each fan is driven by a 200-hp., 870-r.p.m., and a 75-hp., 695-r.p.m., 550-volt Westinghouse induction motor.

PERFORMANCE OF BOILERS AND STOKERS
(Based on guarantees)

Evaporation pounds per hr.	Efficiency per cent	Cubic feet air per minute	Windbox static pressure (inches)	Maximum exit gas temp. deg. F.	Minimum windbox air temp. deg. F.
30,000	85.4	10,330	0.7	515	275
45,000	84.0	14,500	1.3	550	295
60,000	84.0	18,600	2.0	585	310
75,000	83.5	23,000	2.7	620	310
90,000	82.2	27,900	3.7	655	325
107,000	79.4	34,000	5.2	700	330

PERFORMANCE OF BOILER PLANT AT TWO RATINGS
(Based on guarantees)

Pounds of steam per hour, actual	60,000	90,000
Drum safety-valve pressure lb., gage	475	475
Superheated steam temperature, deg. F.	650	670
Per cent CO_2 leaving boiler	14	15
Per cent CO leaving boiler	0	0
Per cent C in dry refuse	8	15
Per cent loss due to soot	0	2
Temp. flue gas leaving boiler, deg.	570	640
Temp. flue gas leaving preheater, deg.	378	436
Temp. water entering boiler, deg.	361	361
Temp. air entering preheater, deg.	80	80
Temp. air leaving preheater, deg.	308	324
Eff. boiler, superheater and furnace, per cent	78.2	75.0
Eff. boiler, superheater, preheater and furnace, per cent	83.2	79.8
Draft loss through boiler, in. of water	0.20	0.50
Draft loss through air preheater, in. of water	0.42	0.85
Air resistance through preheater, in. of water	0.73	1.50
Pounds of flue gas per hour	74,400	106,500
Pounds of air through preheater, per hour	65,900	93,900

Coal analysis, per cent: Carbon, 70.05; hydrogen, 4.65; sulphur, 0.71; oxygen, 6.28; nitrogen, 1.62; moisture, 5.00; ash, 11.69; B.t.u. per lb. as fired, 12,500.

Coal-Handling Equipment

Manufacturer ..... Link Belt Co.
Capacity, tons per hr. 50
Consists of one apron conveyor and one elevator.
Motor on the apron conveyor, 5 hp.; on the elevator, 15 hp., Westinghouse.

Ash-Handling Equipment

Manufacturer ..... Allen-Sherman-Hoff Co.
Type ..... Hydrojet
Water supplied at 75 lb. per sq. in. by two 500-g.p.m. Cameron centrifugal pumps; and 125 lb. per sq. in. by one 1,000-g.p.m. Cameron centrifugal pump. The small pumps are driven by 40-hp., 1,750-r.p.m., 550-volt induction motors and the large pump by a 125-hp., 550-volt induction motor.

Stacks

Manufacturer ..... Birmingham Tank Co.
Number 3
Type ..... Steel
Height, ft. 30
Diameter, ft. 6

Desuperheaters and Open Heaters

Manufacturer ..... Elliott Co.
Desuperheaters 2
Type ..... Cartridge, automatic control
Open heater 1
Type ..... Deaerating
Capacity, 5,000 hp., 150,000 to 180,000 lb. per hr.

Closed Heaters

Manufacturer ..... Griscom-Russell Co.
Number 2
Number of passes 4
Surface area, sq. ft. 726

Boiler-Feed Pumps

Manufacturer ..... Cameron—Ingersoll-Rand Co.
Number 2
Capacity, g.p.m. 584
Total discharge head, ft. 1,324
Drive, one 280-hp. Westinghouse steam turbine; one 300-hp. motor.

Deep Wells and Pumps

Manufacturer of pumps ..... Layne & Bowler, Inc.
Installed by ..... Layne Central Co.
Number 2
Pumps, capacity each, g.p.m. 500
Depth of wells, ft. 130
Pumps driven by 75-hp., 1,170 r.p.m. induction motors.

Condensate and Make-up Water Pumps

Manufacturer ..... Cameron—Ingersoll-Rand Co.
Number 3
Size, two 420 g.p.m. against 83-ft. total head and one 94 g.p.m. against 149 ft. total head. Drive, 15 hp., 550 volt induction motors.

Miscellaneous Equipment

Water purifying equipment, Wm. B. Scaife & Sons Co., consists of two Zeolite softening tanks, each of 10,000-gal. per hr. capacity, and one alkalinator.
Elevated water-storage tank, Chattanooga Boiler & Tank Co., 50,000-gal. capacity, with float switch for starting and stopping deep-well pumps.
Air compressor, Worthington Pump & Mach. Corp., one 5½x4½-in. vertical duplex type, driven by a 15-hp., 865-r.p.m. induction motor.
Overhead traveling crane, Whiting Corp., hand-operated, 20-ton capacity, 32-ft. 6-in. span, 35-ft. lift.
Oil-filtering equipment, S. F. Bowser & Co.; 275 gal. per hr.; 1,000-gal. precipitation tank.
Piping ..... B. Florsheim & Co.
Pipe covering, 85 per cent magnesia ..... Johns-Manville, Inc.
Building structural steel ..... Ingalls Iron Works Co.

Meters

Boiler feed water, venturi ..... Builders Iron Foundry
Steam-flow meters ..... Republic Flow Meters Co.
Recording thermometers ..... Taylor Instrument Co.'s
Recording pressure gages ..... Taylor Instrument Co.'s
Indicating thermometers ..... C. J. Tagliabue Mfg. Co.
Draft gages ..... Ellison Draft Gauge Co.
Indicating pressure gages ..... Ashton Valve Co.

Valves

Relief and bypass ..... Grinnell Co.
Safety ..... Consolidated Ashcroft-Hancock Co.
Reducing ..... Fisher Governor Co.
Stop ..... Edward Valve & Mfg. Co.
Valves in the steam and water lines supplied by Walworth Co.; Chapman Valve Mfg. Co.; Edward Valve & Mfg. Co.; Lunkenheimer Co.; and Crane Co.

Steam Turbines

Manufacturer ..... General Electric Co.
Number and capacity, one 6,000 kw. and one 2,000 kw. Steam condition at throttle, 450 lb. gage, 675 deg. total temperature. Steam extracted from 6,000-kw. unit at 150 lb. and 35 lb. gage pressure; exhausts at 5 lb. back pressure. The 2,000-kw. unit operates condensing, exhausting to a Westinghouse jet condenser.

PERFORMANCE OF 6,000-KW. TURBINE

Heat drop through turbine	Steam flow, Lb. per hr.	Heat drop, B.t.u. per lb.	Steam flow, Lb. per hr.	Heat drop, B.t.u. per lb.	Steam flow, Lb. per hr.	Heat drop, B.t.u. per lb.
From throttle to 150-lb. extraction	190,000	69.5	100,000	68	.....	...
From 150-lb. to 35-lb. extraction....	90,000	78	80,000	79.7	50,000	71.4
From 35-lb. extraction to 5-lb. exhaust	20,000	49.2	17,500	49.8	5,000	25.5

Generators, one 6,000- and one 2,000-kw., 2,300-volt 3-phase, 60-cycle ..... General Electric Co.
Generator air and oil coolers ..... General Electric Co.
Motor-generator set, 50 kw. for emergency excitation ..... Westinghouse Elec. & Mfg. Co.
Generator air oil cooler pump, 200 g.p.m., 110- to 135-ft. head ..... Cameron—Ingersoll-Rand Co.
Eleven power transformers main and auxiliary ..... Westinghouse Elec. & Mfg. Co.
Main switchboard and instrument transformers ..... Westinghouse Elec. & Mfg. Co.
Station service switchboard and field breaker panel with carbon circuit breakers ..... I. T. E. Circuit Breaker Co.
Oil circuit breakers, solenoid and motor operated ..... General Electric Co.
Storage battery ..... Electric Storage Battery Co.

in the combustion chamber. By this arrangement a suitable windbox pressure is maintained at all times to compensate for inequalities in the fuel bed caused by variation in the coal feed, moisture in the coal or degrees of fineness of the coal being fed.

The ten regulators or controllers are supported on neat stands mounted on the floor of the boiler room. All these controllers are operated by compressed air as a source of power, and each device is provided with an air filter.

As the demand for process steam and the demand for power on the 6000 k.w. turbo-generator may not coincide in their respective fluctuations, three back pressure relief valves, exhausting to the atmosphere, are provided and connected respectively to the 150- and the 35-pound process steam pipe lines and to the 5-pound turbine exhaust line. Should the pressure rise for any reason in any of these three steam lines, the corresponding relief valve will open and allow exhaust or blow-off to the atmosphere. These relief valves act as safety devices to prevent damage to the steam turbine and its accessories.

The entire plant is very completely equipped with instruments, such as steam flow meters recording thermometers and pressure gages, indicating thermometers and pressure gages, draft gages and venturi type boiler feedwater meters, so that complete sets of observations and readings can be made during the operation of the plant.

Bark Burning Boiler Plant

Another feature of the plant is the 600 h.p. bark burning boiler, which is erected separate from steam power plant and between the latter and the paper mill. This boiler is arranged to give steam of the same pressure and degree of superheat as the 150 pounds per square inch process steam piped over to the paper mill.

Figs. 11 and 12 show the conveyor which carries the bark from the paper mill to the bark burning boiler plant. Delivery of bark is taken from the paper mill at a point close to the barking drums of the paper mill, and is elevated and conveyed to a large storage bin in the bark burning boiler plant. Thence it is taken by a drag conveyor and discharged into a dutch oven, and then into the furnace of the horizontal B. & W. tubular boiler.

The 6-inch condensate return pipe line from the paper mill which is carried along with the process steam pipe lines on the structure shown, is by-passed into the bark burning boiler plant, and thus provides a source of distilled hot water for boiler feed purposes.

The whole power plant represents an investment of close to $1,500,000, and stands as a measure of the faith of the South eastern Power & Light Company, and its subsidiaries in the future development of Mobile and its environs. It is hoped that in the not distant future the demand for power will call for an enlargement of the plant to several times its initial capacity.

The plant was designed by the Southeastern Engineering Company and built by the Dixie Construction Company for the Southeastern Production Company, all of the companies being subsidiaries of the Southeastern Power and Light Company. William P. Hammond, as engineer for the Southeastern Engineering Company, was in direct charge of design work with John M. Gallalee, of the University of Alabama and A. T. Hutchins, of the Alabama Power Company as consultants. All work on design and construction was under general direction of O. G. Thurlow, chief engineer for the entire Southeastern Power and Light Company.

Fine and Special Paper Committee Annual Meeting

Dr. Jessie E. Minor, chairman announces the following committee plans and annual meeting program. The committee will sponsor a meeting at the Pennsylvania Hotel on Wednesday, February 19th.

The Fine and Special Paper Committee recognizes as its chief function that which is implied in its name—the study of such problems as relate primarily to the manufacture of Fine and Special papers. While there are many types of problems which could well fall within the scope of this Committee, so much attention has been attracted to the need of more permanence in papers for important records that the question of determination of paper permanence is undoubtedly the most important one before the manufacturers of fine papers.

For that reason the Fine and Special Paper Committee has attempted to prepare for the meetings this year a program which will review the present state of our knowledge of the subject of paper permanence, and which will open up the subject in such a way as to invite discussions from all interested, thus serving as a clearing house of ideas as to the value of work being done and of plans for future research on the subject.

An effort has been made in planning this meeting to prepare a program of which the first will be of particular interest to those who buy, sell, and manufacture paper, while the second half will be more directly of interest to the paper chemists who are working on the testing of paper permanence.

The outline of the program as planned is as follows:

1. Permanence definition, trade attitude, practices, theories, etc., Miss H. U. Kiely.
2. Literature of work on paper permanence, critically reviewed by M. D. Bardeen.
3. Fiber differences explained from the standpoint of:
   1. Chemical composition.
   2. Fiber structure and physical properties.
   3. Treatment in papermaking as cleansing, sizing, cutting etc.
4. Artificial aging as a means of determining paper permanence.
5. Chemical Tests for permanence and their interpretation.
   1. Acidity
      Papers by W. D. Hoffman, Northwest Paper Company.
      B. L. Wehmhoff, Government Printing Office.
   2. Viscosity
      Papers by H. Bialkowski, American Writing Laboratory.
   3. Copper number
      Papers by J. H. Burgen, Rag Content Paper Manufacturers Laboratory.
      P. B. Davidson, Mellon Institute.
   4. Alpha content
      Paper by Dr. Th. Bentzen, Whiting-Plover Paper Company.
   5. Soda soluble
      Paper by B. K. Steadman, Standard Paper Company.
   6. Rosin size
   7. Summary and conclusion.

All papers of any length prepared for item 5 are to be given only in abstract of 3 to 5 minutes in order to reserve time for discussions.

It is hoped that all who are interested in these subjects will come prepared to offer questions or contributions to the discussions.

Inasmuch as the subject of paper permanence is so closely related to the chemistry of cellulose and the future development along this line will undoubtedly call for research into pure chemistry it is hoped that the above program may be given in a joint symposium of the Cellulose and Fine Paper Committees to be presided over by the chairman of the Cellulose Committee.

Russian Paper Men Visit Bagley & Sewall

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 20, 1930.—A group of paper mill engineers from Russia will visit this city this week to inspect the methods used in the Bagley & Sewall plant. These officials also plan to inspect the work being done on the huge paper machine being built by the local concern for the Russian government. It was learned that the engineers had already arrived in New York where officials of the Bagley & Sewall Company conferred with them. During their visit to this country the engineers plan to make an inspection of the larger paper mills for the purpose of obtaining all possible methods which can be utilized in the Russian plants. The first machine built for Russia is now being set up in the factory of the Volga River Pulp and Paper Company.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

For additional information regarding these abstracts subscribers should address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Research Council, 21st and B Streets, Washington, D. C.

Stencil Sheet. H. L. Shallcross, assignor to the Shallcross Company. U. S. pat. 1,674,611, June 19, 1928.—A suitable paper of porous open texture is coated with an alcoholic solution of lac mixed with dissolved nitrocellulose, camphor and oil.—A. P.-C.

Stencil Sheet. S. Horii. Eng. pat. 278,956, Mar. 18, 1927. Sheets such as Yoshino paper are coated with a composition containing a solution of an ester of polysaccharides such as mannan acetate, cellulose acetate or cellulose nitrate and the fatty acid of tsubaki oil. The fatty acids of sasanqua oil and other ingredients such as ethyl acetate, amyl acetate, amyl alcohol and gasoline may be used in the composition.—A. P.-C.

Felted Waterproof Sheet Material. L. Kirschbraun. U. S. pat. 1,672,262, June 5, 1928. Sheets suitable for roofing comprise wood or grass fiber or other fibrous material with an asphalt binder coating the fibers in the form of a substantially continuous film containing a dispersing agent such as colloidal clay. In forming the sheet, the fibers are felted in the presence of the binder.—A. P.-C.

Hair Felt. A. L. Clapp assignor to Beckwith Manufacturing Company. U. S. pat. 1,673,967, June 19, 1928.—Cellulosic material is beaten together with soap having the slimy characteristics of a straight-chain fatty-acid soap, long hair is added to the beater and beating is continued to comb out the fibers while maintaining them of original length until they are thoroughly individualized. The stock is then run on a paper machine.—A. P.-C.

Hard Grainless Insulating Board and Process of Making Same. W. H. Mason assignor to Mason Fibre Company. U. S. pats. 1,663,503, to 1,663,506, March 20, 1928. *No. 1,663,503.*—The patent covers the production of fiber board from lignocellulosic fibers containing all, or practically all of the ligneous material present in the wood from which it is produced, preferably by the Mason fiber-explosion process. It is felted into a sheet, preferably from a hot water suspension (about 180 degrees F.) *No. 1,663,504.*—Fiber produced by Mason's explosion process is suspended in water, hydrated by heating if required, mixed with sizing material and materials for imparting fiber resistant qualities, felted into sheets and dried under pressure between the steam-heated platens of a press. The press is arranged to produce sheets of predetermined thickness by providing spacer blocks of suitable thickness between the press platens. A pressure of about 5 to 15 lbs. per sq. in. is applied to the platens, which are heated with steam at about 70 to 100 lbs. pressure. Towards the end of the drying operation, after the water has been reduced to or below the fiber saturation point, the fibers have become set; the pressure of the press is released and drying is completed without pressure. *No. 1,663,506.*—Fiber produced by Mason's explosion process is suitably felted and is dried under a pressure of 200 to 700 lbs. per sq. in. the pressure being maintained until the drying is practically complete. *No. 1,664,506.*—Moist board made from fiber produced by Mason's fiber explosion process is subjected simultaneously by heat and high pressure to effect a welding of the fibers together, this action taking place as the heat gradually penetrates from the surface towards the center of the board. After welding has proceeded to a certain depth the pressure on the board is gradually released, enabling the central, unwelded portion to expand without disrupting its structure, and drying is completed without pressure. This furnishes a board having a dense, smooth hard outer layer, and a porous, insulating, center portion. By applying heat to only one platen of the press, the board is made with only one dense, hard, surface layer. A. P.-C.

Apparatus for Making Composition Boards or Sheets. G. H. Ellis. U. S. pat. 1, 672,249, June 5, 1928. The invention provides an apparatus for making composition boards, such as Insulite. It comprises a pair of perforated cylinders having their surfaces in close proximity and partially submerged in fibrous pulp stock, and between which the stock adhering to the surface of the cylinders is fed and compressed into a sheet. Compressed air is blown between the rolls thereby forcing down the level of the stock between the cylinders and forming a pressure chamber defined by the layers of pulp adhering to the two cylinders and the level of the liquid stock, which holds the pulp layers against the surfaces of the cylinders and tends to force part of the water out of the sheets. A. P.-C.

Hair Felt and Method of Making Same. A. L. Clapp assignor to Beckwith Manufacturing Company. U. S. pat. 1,673,967, June 19, 1928. The object of the invention is to produce on a paper machine a felt comprising a large proportion of hair of original length, which is quite tough, but at the same time is somewhat open and porous so that it may be saturated with asphalt, etc. for making roofing, flooring, shoe stiffeners, etc. In order that the hair may be combed out in the beater without being unduly cut and at the same time that it may felt properly on the paper machine, it is beaten in presence of a mixture of short hair and rags which have previously been beaten to a slimy mass in presence of caustic soda. Before dropping the beater, alum is added to precipitate the slimy gelatinous mixture of short hair and hair wholly and partially dissolved in the caustic soda solution. A.P.-C.

TAPPI Notes

Clarence J. West, director of the research information department of the National Research Council, Washington, D. C. was a visitor to the Technical Association office this week.

Maurice Brot, assistant director of the School of Paper Making, Grenoble, France sailed from New York on Saturday.

Charles L. Wagner, who has been with the Celotex Company in Chicago, will join the technical organization of the Marathon Paper Mill Company, Rothschild, Wisconsin.

J. M. Hibbs, who has been a sales engineer for A. Klipstein & Co., New York, has taken a similar position with the Paper Makers Chemical Corporation in Kalamazoo, Michigan.

Granville C. Chase, formerly with the Brown Company in Berlin, N. H. is now with the Frazer Companies, Ltd., Madewaska, Maine.

Vernon Woodside, who has been chemist for the Foster Box Board Company in Utica, N. Y. has joined the technical staff of the Oswego Falls Corporation, Skaneateles, N. Y.

G. F. Magnuson has resigned as president of Skonviks A/B to become technical director of Krueger & Toll A/B, Stockholm, Sweden.

SECTION OF THE
COST ASSOCIATION OF THE PAPER INDUSTRY
Affiliated with
THE AMERICAN PAPER AND PULP ASSOCIATION
Edited by Thos. J. Burke C.A. Sec.-Treas.

Accounting As A Science*

By C. Rufus Rorem

The assertion is often made by practitioners and teachers that accounting is a "science." The statement is assumed to be self-evident, so true that it needs only to be made to be proved. To demonstrate or prove the statement would be to doubt its validity, to admit that it might not be true. It is the purpose of this paper to examine the nature of accounting, to consider whether the subject matter and method of accounting justify the statement that accounting is a science. Probably no one, even the most ardent champion, would assert that accounting writers and practitioners are always strictly objective in their points of view. The fact that much literature and practice have been unscientific in character explains in part the lack of discussion on the thesis, "Accounting is a science." The proponents have preferred not to raise disturbing issues. The opponents have smiled at the humor of the statement, considering it so untrue as not to be taken seriously.

Nature of a Science

Science, in the sense of a system of results, is a simple conthe discussion can proceed. If one considers science as a system of results, everybody can see at once what is meant by the name. It is simply those theories and facts that are called physics, chemistry, biology, etc. These sciences are sometimes referred to as the "Natural" sciences or physical sciences, because the phenomena are for the most part independent of human relationships. Another group of sciences—the social sciences—comprises the theories and facts of human relationships, to include economics, sociology, politics, etc. It is in the class of the applied social sciences that accounting must be grouped.

Science, in the sense of a system of results, is a simple concept but an unsatisfactory one, for science would be always changing. Science of today will look as foolish in a century's time as that of a century ago does now, and with as good a reason. Is there then anything really permanent about science? I think there is, and that is the method. Theory may supersede theory and more accurate analysis may demolish apparent facts, but there is a unity and continuity about the method that the mind should be able to grasp, and that is the very essence of science. The kind of definition that is required, therefore, is that of science as a process rather than a collection of results. These ideas were expressed by A. D. Ritchie in "Scientific Method." He defines science as the "process of exploring the external world." Other writers could be cited who express the same opinion, namely, that the essence of a science is not to be found in its subject matter but in its method. "The field of science is unlimited; its material is endless; every group of natural phenomena, every phase of social life, every stage of past or present development is material for science. . . . . The man who classifies facts of any kind whatever, who sees their mutual relation and describes their sequences, is applying the scientific method and is a man of science." This quotation is from Karl Pearson's "The Grammar of Science."

Measuring Economic Facts

Accounting is the science of measuring and interpreting the economic facts of a given enterprise. The method followed in accounting exemplifies the quantitative method of scientific analysis, in that accounting confines itself to those aspects of phenomena which can be measured. Quantitative method is to be contrasted with the genetic or comparative methods which place emphasis primarily upon qualitative analysis without regard to the measurement of the qualities discovered. In the past the quantitative method has been omitted almost entirely from the procedures of the social sciences, because of the difficulty of segregating the phenomena for treatment. The omission has often resulted in the substitution of rules of thumb for gathering the needed data. Rules of thumb are exceedingly useful in practice, when the scientist recognizes their limitations. But they are mischievous when elevated to the category of principles or when applied to unusual cases. Two instances of difficulties arising from indiscriminate use of practical rules appear when instructors use a simple formula to explain the debit-credit theory or practitioners attempt to justify the cost-or-market rule under all conditions.

Quantitative method involves the measurement of phenomena and the interpretation of data. It may be sub-divided into two basic steps or processes; measurement and interpretation. These two terms, as will be shown in the following discussion are broad enough to include such aspects or phases as collection, classification, summarization, presentation, analysis, description. Interpretation, as here defined, involves classification and summarization, followed by comparison of different classes and groups of data.

Recording is not a basic process in the quantitative method. Records are, of course, necessary to the application of quantitative method; in fact, records must be maintained during each phase of its application. Recording, then, is not a single process in quantitative method; it is rather a requirement which must accompany each of the processes, if the data are at all numerous. Much confusion has resulted from a misunderstanding of the place of records in the explanation of the

* The Journal of Accountancy.

principles of accounting. The bookkeeping records are important, very important in accounting. They serve as evidence of transactions; they summarize economic conditions and events presumably similar enough to be classified under the same account captions. A trial balance indicates that a bookkeeper has followed the double-entry ritual with the respect and deference which it deserves. But the maintenance of a continuance of double-entry equilibrium in the ledgers is not one of the basic objectives of accounting when viewed as a type of scientific method. It is merely an arbitrary limitation placed upon the accounting procedure, a practical limitation dictated by the advantages of the system. Double-entry procedure, by maintaining the equilibrium of assets and the ownership in them, facilitates both the placing of responsibility for funds and the administration of the resources themselves. But double-entry record keeping is not the core of accounting method.

Contrasting Accounting with Statistics

Before proceeding to a further discussion of accounting as a science of measurement and interpretation, it might be well to contrast accounting with statistics, when the latter term is used in the sense of statistical method rather than as a mass of collected data. Sometimes the expression "statistical method" is used as synonymous with quantitative method. Both statistics and accounting, however, may be regarded as applications of the same general method of analysis. Accounting usually limits its measurement of economic phenomena to the aspects which can be expressed in terms of money; statistics may deal with economic phenomena in any of their aspects, selecting any unit of measure (including money) which may be of use for the purpose at hand. Accounting classifies and summarizes the data from the point of view of a specific enterprise; statistics, on the other hand, need be subject to no such limitation. It may deal with data from the point of view of the entire economic order of which the enterprise is a part.

Statistical data are often very important in the administration of a specific enterprise and should be used by the managers whenever they can be secured. Statistical analysis may carry on beyond the point where accountants usually stop in their analysis of business data.

Attempts have been made to differentiate statistics and accounting by the fact that workers in statistics have developed the technique of measurement and interpretation further than have the accountants. This distinction is purely historical and can not be regarded as basic. The special technique of statisticians is the common property of all workers in quantitative method. The failure of accountants to use more refined methods in measuring phenomena and interpreting data is not evidence of a difference in accounting and statistical method. It merely indicates that such technique has not been considered necessary by accountants—mistakenly enough, in some cases—for dealing with the financial data of an economic enterprise.

Scientific in Their Practices

In so far as the accountants have used technique accurate enough for the purposes at hand, they have been scientific in their practices. It is just as unscientific to use methods which are more accurate than necessary as methods not accurate enough. It is a waste of effort to carry out analyses further than is necessary to give the required result. Probably many accountants have erred in not developing their valuation and interpretation practices to keep pace with the needs of modern enterprise. Methods which will suffice for small-scale enterprise, or for expanding business on a frontier offering abundant resources and high profits, will not suffice for big business in a commonwealth where competition narrows the rate of profit.

The relation between accounting and statistics is one on which writers do not agree. Either can be made a sub-division of the other, depending on the meanings given to the general terms. When accounting is described merely as the "account of" certain conditions or events it may be sub-divided into various aspects. The account may be rendered in literary or numerical terms. If in numerical terms the fact may be expressed by financial or non-financial records. The term statistics is then used to characterize the non-financial data. But when the term statistics is used as equivalent to quantitative method, accounting is sometimes said to be a particular application of general method applied in gathering statistics. Neither point of view is entirely wrong or right, for the simple reason that one contrast emphasizes the variations in the results, the other recognizes the similarity in the method. In the last analysis it is unnecessary to try to make either accounting or statistics subordinate to the other. It is sufficient to recognize that they both apply the quantitative method of scienific analysis.

Selection of a Unit of Measure

Measurement involves the selection and application of a unit of measure. The adequacy of a unit depends on the nature of the phenomena to be treated. The phenomena with which accounting deals are the economic conditions and transactions of an enterprise—business capital and business income. It measures and interprets those events which change the status of an enterprise, such as investment of funds, purchase of materials, payment of wages, sale of merchandise, or use of supplies in manufacturing operations. The measurement of business capital and income is usually discussed under such captions as "asset valuation" and "income determination," and it is these procedures which comprise the measurement phase of accounting as a scientific method.

The length of an article of furniture is usually measured in terms of some well known unit of linear measure, such as the inch or centimeter. The measurement of the amount of food a person has consumed may be made in terms of volume, weight or heat content. The measurement of a man's labor may be made in terms of hours of employment, or pounds of material handled. No single unit, however, would serve to compare the different important characteristics of furniture, food or labeor. The relative linear dimensions of furniture and food are obviously of no significance for most purposes, moreover, labor can not be expressed in terms of linear measure. Similarly, the other units for measuring physical characteristics (such as volume, weight, heat content) do not usually provide the basis for comparing widely different phenomena.

Accounting, in its treatment of economic phenomena, typically selects money as the basis of measurement. Exchange value is the characteristic which identifies economic phenomena, and it serves to compare the economic significance of furniture, food and labor. Accounting would conceivably be necessary even in a barter economy, particularly if time elapsed between different phases of the barter transactions.

Certain Limitations

Money as a unit of measure is, of course, subject to certain limitations. It will not measure the loyalty of an employee, the power factor of an electric motor, or the heat of a blast furnace; yet these items often are very important in deciding whether an enterprise will be a financial success or failure. The accountant can measure such important factors as these only by an indirect appraisal of their effects on the money costs of a final product. Money value is widely applicable to a large number of different economic phenomena, but it does not deal with all the important aspects of these phenomena. A beautiful city hall is an important factor in the economic status and operations of a community and of the individual enterprises there. To say that it is not easily measured in terms of exchange value is not to say that it has no economic significance.

The monetary unit may itself change in value, because of fluctuations in international exchange rates, changes in the general price level, or changes in the political system under which economic values are established. Likewise changes in the system under which certain values are established may modify or entirely destroy the property rights and contractual privileges of individuals. The present Fascist political system has necessitated a complete reconsideration of the old methods of accounting valuation in Italy. The values of inventories, receivables, long-term securities, land and buildings have all been greatly affected by the special relationships of the owners to the government. The accountant typically assumes that the dollar is of constant value, although there are many cases where this assumption is not justified. The current argument over the recognition of appreciation caused by rising price levels, is evidence of the accountant's awareness of the limitations of money in accounting valuation.

Must Be Applied Correctly

After a satisfactory unit of measure has been selected, it must be applied correctly to the phenomena, a task which is often exceedingly difficult. In the first place, the measurement may be affected by bias on the part of the persons securing the data. For example, a business man may tend to understate the amount of his profit when preparing an income tax return and overstate it when applying to a bank for accommodation. The direction of personal bias is affected by the uses to which data are to be placed, sometimes tending to overstatement of measurement, sometimes to under-statement. One type of bias which has dominated accounting valuation is the conviction that "conservatism" is a good thing. To the extent that conservatism prevents unwise business policies based on measurements that are liable to error, it is a good thing. To the extent that it conceals facts important for management, it can not be approved by practical people.

In the second place, the accuracy of measurement may be affected by the adequacy of the technique used for securing the data. For example, a person measuring the height of a mountain above sea level will ordinarily apply the principles of trigonometry to his task, thus obtaining data more accurate than his opinion expressed without such aid. A person can not correctly estimate the population of a city by walking about the streets and getting an "idea" of the size of the town. Census enumeration requires an elaborate technique of interviewing individuals properly to account for non-residents, transients, recent arrivals. Personal observation may be satisfactory for counting the number of sacks of sugar on the shelf of a grocery store; it would be inadequate for calculating the number of pounds of sugar sold in a given city during a certain period of time. A person unfamiliar with the principles of trigonometry might say that it would be impossible to measure the height of a mountain; likewise a person unskilled in dealing with large numbers might assert that the population of a city or the amount of sugar sold therein could not be determined. Complex and numerous phenomena require special techniques for their measurement. Failure to select or inability to apply proper technique may result in measurements no more accurate than the crudest type of personal conjecture.

In the third place, the measurement of economic phenomena is conditioned by the intended uses for which business assets are owned or business operations are carried on. A motor truck may be worth $2,000 if utilized in the transportation of goods; it may be worth only $1,000 if offered for immediate sale in the second-hand automobile market. Yet each amount may properly be said to indicate the value of the motor truck; in other words, an asset may have several values, depending upon the use to which it is to be placed.

Classification and Summarization

Interpretation involves classification and summarization, and also the comparison of classes and groups of data. The interpretation of quantitative data—of which accounting data are a type—is the second basic process in accounting method. The process of interpretation begins with classification—with the attempt to segregate data into fundamentally similar classes; it follows with a summarization of these classes into larger, more significant groups. It is carried forward by comparison—the search for measurable relationships among the classes and groups of data, particularly those relationships which are important for purposes of administrative control. The basis for classification of quantitative data will vary with the purpose of the measurement and the technique, available for the classification. For example, one hundred persons may be classified according to their heights, measured in feet and inches. The persons may also be classified according to such characteristics as their weight, age, experience, education or race; the purpose of the classification will determine which basis or combination of bases is most useful.

Advantages and Limitations

So, also, in the accounting field, the classification of economic data is conditioned by the purpose of the analysis. Accounting data are assembled to express in financial terms the economic capital and income of a specific enterprise; consequently the accounting data of an enterprise are first of all classified as to those which appear in the balance-sheet and those which are set forth in the statement of profit and loss. Each major class of accounting data—assets, liabilities, proprietorship, income, expense—are accordingly sub-classified into smaller groups, the bases of classification varying with the accountant's views as to what are appropriate. The advantages and limitations of various bases of classification are important factors in establishing the accounting records of a business enterprise. In practice at least four different bases underlie the grouping of accounting data used by private and public accountants. They are: (a) intended uses or purposes (current assets, fixed assets, investments); (b) inherent qualities or properties (salaries, supplies, depreciation); (c) administrative responsibility (production expenses, selling expenses); (d) financial appropriations (general funds, special funds). The problem of classification is frequently encountered when a valuation is to be attempted; in fact, one reason for classification of business assets is to make it easier to establish correct values for them. The general notion that classification as well as valuation is purposive and not an end in itself finds expression repeatedly in the literature of the natural sciences.

Summarization is the process of classifying established groups under larger and more inclusive headings. In one sense it is reclassification, although this latter term could apply equally well to mere shifting of data from one class to another of equal rank, or to sub-division into still smaller classes. The practice of summarization, as the process of bringing under general headings the related data of various types, seems to the writer to be prevalent enough and important enough to justify its mention as a separate phase of quantitative method. The type of summary that will be prepared varies with the use it is to serve. For example, a report may show the various items of merchandise owned by an enterprise at a given time, or the various types of expenses incurred during a period of time. In some cases the reports may, of course, consist of complete financial summaries of status or operations, known as balance-sheets and statements of profit and loss.

Technique of Presentation Varies

The technique of presenting the summarized data also varies with the purposes for which reports are prepared. Graphic presentations are very common; they include curves, pictures, maps. The graphic form of presentation is easily comprehended and is very useful in the expression of general facts; it is not well adapted to reports which must show a great amount of detail.

COST SECTION

Another method of presenting accounting facts is the tabular method, which consists of assembling the numerical data into rows and columns, with groups and sub-groups. This method is exemplified in the accounts of a business enterprise as ordinarily kept, also in the orthodox statements of financial condition and operations. This method of presentation is well adapted to accounting data and is capable of expressing a great amount of important detail, but it is not as easily comprehended as graphic presentation. Both graphic and tabular methods of presenting data are useful in accounting, although accountants have in the past confined themselves almost entirely to the preparation of tabular reports.

The interpretation of data extends beyond classification and summarization. Interpretation also includes comparison-discovery and measurement of important relationships between the data in reports. It is here, of course, that the refined technique arising out of statistical theory performs one of its most important functions, by defining and suggesting the advantages of ratios, averages, variations and trends. A banker may be interested in the ability of an enterprise to repay a sixty-day loan. He would thus wish to know the ratio between the resources which could be realized upon promptly on the one hand and the existing obligations which must be met in the near future on the other. A sales manager of an enterprise may be interested to know that the average monthly sales for a year were $15,000. He would also be interested to know that the sales for individual months showed a variation from an amount as low as $5,000 to an amount as high as $25,000. Knowledge of this average and of the variations therefrom might serve as the basis for action designed to obtain more regular income from the sale of merchandise. Important relationships may also be revealed by the discovery of trends in the economic conditions during a season, a year, a business cycle, or a long period of economic development. Study may reveal, for example, that the average sales per month of an enterprise have increased annually for a number of years. The technique of discovering trends in economic activity requires the use of some of the most elaborate devices of interpretation. Throughout all interpretation of summarized data, the particular ratios, averages, variations and trends to be sought for will vary with the purpose for which the data are to be used.

This discussion can not close without contrasting briefly the viewpoints of economics and accounting. It might be argued that everything which has been said of accounting could also have been said of economics. Economic analysis deals with value phenomena, capital and income. It includes the measurement of economic transactions, the classification of their effects and the interpretation of the classified and summarized data. Accounting may be defined as "applied economics," in much the same way that the term "applied mathematics" is used. But I do not believe such a concept is satisfactory. The proper contrast is more analogous to the contrast between the term "metaphyiscs" and "science," when the subjects are discussed in terms of their objectives. It is the aim of metaphysics to give an account of everything all at once—or at least within the compass of a large book. The economist holds himself responsible for explaining the interworkings of all economic phenomena. The accountant goes to work upon a small fragment of things. He applies his method to a special situation, viewing all economic phenomena from the point of view of a profit-seeking, continuously operating, privately controlled enterprise. He does not attempt to experiment with or observe the whole universe. He makes assumptions as to the general economic conditions which underlie his own particular task of accounting valuation and interpretation. He assumes, for example, that business policies will be carried out, that business transactions are economic (not philanthropic), that the prevailing economic order will continue, that business conditions can be predicted. The assumptions are tentative and can be changed when they turn out to be wrong or inconvenient. If an accountant refuses to take seriously the orthodox economic explanation of the theory of interest or profit, it need not imply that he is ignorant of the method and advantages of economic theory. It may mean merely that he is too busy imputing income to individuals in terms of contracts to concern himself with the classical grouping of factors of production. If he establishes the values of assets by considering their original cost, such action does not mean he has never heard that the essence of an asset's value is its future net income. It may indicate merely that life is too short to use a complex formula to capitalize the future income inherent in a lathe or a motor truck.

The processes of measurement and interpretation are not mutually exclusive in the sense that one precedes the other or that either can be carried on independently. In practice accurate valuation must wait upon significant bases for classification of the accounting phenomena under consideration; the processes merge into each other to such a degree that they are at times almost indistinguishable. That accounting, properly conceived of, is a type of scientific method can not be doubted. The opportunities for the accountant to adopt a scientific point of view and to utilize scientific technique are endless; in fact, such viewpoint and technique are necessitated by the importance of the phenomena—business capital and income—with which the accountant deals. Accounting has been described as a "pragmatic" science by A. S. Dewing, in his "Financial Policies of Corporations," rather than a pure or abstract science. This characterization challenges the scientific integrity of every student, teacher and practitioner concerned with the profession of accounting. The practical problems to which the method of accounting are applied require careful measurement and interpretation for their solution. They must be approached by men whose attitude is impersonal, whose viewpoint is objective, who comprehend the meaning of the statement "Accounting is a science."

SENATE COMPLETES PAPER SCHEDULE

(*Continued from page 21*)

graph of the following phrase "pulp board in rolls for use in the manufacture of wall board, 5 per centum ad valorem."

The Senate also adopted another Walsh amendment in paragraph 1413 which provided for a duty of 30 per cent on paper board and pulp board. This amendment excepted pulp board in rolls for use in the manufacture of wall board from this paragraph. The Walsh amendment made the following provision, "except pulp board in rolls for use in the manufacture of wall board."

The Senate adopted the Finance Committee amendment increasing the duty on manufactures of pulp, not specially provided for from 25 to 30 per cent so that paragraph 1403 as finally adopted reads as follows:

"Par. 1403. Filter masse or fiber stock, composed wholly or in part of wood pulp, wood flour, cotton or other vegetable fiber, 20 per centum ad valorem; indurated fiber ware, masks composed of paper, pulp or papier mache, and manufactures of papier mache, not specially provided for, 25 per centum ad valorem; manufactures of pulp, not specially provided for, 30 per centum ad valorem."

By a vote of 34 to 30 the Senate rejected the Finance committee amendment retaining duties of 3 cents per pound plus 15 per cent ad valorem on basic paper for sensitizing and 3 cents plus 20 per cent ad valorem on sensitized paper for photographic purposes, in favor of the House rates of 5 per cent and 30 per cent respectively.

The Senate also rejected the Finance Committee amendment to increase the rates on maps and charts from 25 to 40 per cent, leaving these duitable as under the present law.

Buffalo Steam Pump Co. Elects Officers

BUFFALO. N. Y. January, 20, 1930.—At the annual meeting of stockholders of the Buffalo Steam Pump Co. on January 14, the following were elected as directors: Edgar F. Wendt, Henry W. Wendt, Robert G. Nye, and Amos G. Peterson.

PARIS BLACK IN FIBRE CONTAINERS

Still going strong . . have you ordered?

Buyers liked the idea of Paris Black in Fibre Containers right from the start. There has been no let down in the demand—in fact, it is increasing.

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So this is a reminder to try it, in case you aren't already a satisfied user. By packing in fibre containers, the full strength and fine quality of Heller & Merz Paris Black reaches your plant unimpaired.

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Boston, 287 Atlantic Ave. | Chicago, 146 W. Kinzie St. | Springfield, Mass., 40 Albert St. | Philadelphia, 114 Market St.
Factory—NEWARK, N. J.

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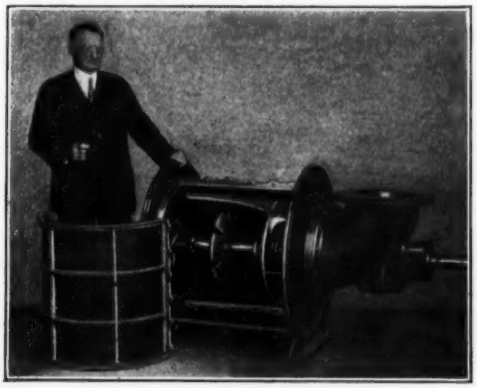

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Proportioning and Metering System as an efficient screen.

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GLENS FALLS, N. Y.

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NEW YORK IMPORTS

WEEK ENDING JANUARY 18, 1930

SUMMARY

Cigarette paper	577 cs.
Wall paper	97 bls., 24 cs.
Paper hangings	49 bls., 3 cs.
Hanging paper	3cs.
News print	11090 rolls
Printing paper	259 cs.
Packing paper	87 cs.
Filter paper	3 bls., 25 cs.
Drawing paper	8 rolls, 58 cs.
Decalcomania paper	26 cs.
Colored paper	94 cs.
Transparent greaseproof paper	121 cs.
Coated paper	13 cs.
Metal coated paper	29 cs.
Baryta coated paper	50 crates, 189 cs.
Tissue paper	95 cs.
Bowl paper	6 bls.
Writing paper	17 cs.
Stencil paper, etc.	15 cs.
Coutchouc paper	24 cs.
Envelopes	61 cs.
Straw board	215 rolls
Miscellaneous paper	346 rolls, 16 bls., 206 cs.

CIGARETTE PAPER

De Manduit Paper Corp., Sarcozie, Havre, 430 cs.

Standard Products Corp., Ile de France, Havre, 147 cs.

WALL PAPER

Bendix Paper Co., Westphalia, Hamburg, 12 cs.

R. F. Downing & Co., Westphalia, Hamburg, 2 bls.

Kensington Wallpaper Co., Cleveland, Hamburg, 8 bls.

F. J. Emmerich, Cleveland, Hamburg, 20 bls., 1 cs.

Irving Trust Co., Cleveland, Hamburg, 11 cs.

Phoenix Shipping Co., Cleveland, Hamburg, 29 bls.

Schmidt & Pritchard, Muenchen, Bremen, 5 bls.

A. W. Fenton, Inc., Muenchen, Bremen, 2 bls.

F. A. Binder, Muenchen, Bremen, 11 bls.

A. C. Dodman, Jr., Inc., American Farmer, Hamburg, 17 bls.

Globe Shipping Co., American Farmer, Hamburg, 2 bls.

F. J. Emmerich, Ascania, London, 1 ble.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Scythia, Liverpool, 2 bls.

A. C. Dodman, Jr., Inc., Adriatic, Liverpool, 18 bls.

W. H. S. Lloyd & Co., Ascania, London, 29 bls.

Whiting & Patterson Co., Inc., Aquitania, Southampton, 3 cs.

HANGING PAPER

W. H. S. Lloyd & Co., Ile de France, Havre, 3 cs.

NEWS PRINT

Hudson Trading Co., Griesheim, Wifstavarf, 320 rolls.

——, Norefjord, Oslo, 229 rolls.

Perkins Goodwin & Co., Westphalia, Hamburg, 170 rolls.

Parsons & Whittemore, Inc., Muenchen, Bremen, 606 rolls.

Bank of Montreal, Humberarm, Cornerbrook, 9476 rolls.

H. Reeve Angel & Co., Inc., Schenectady, Helsingfors, 289 rolls.

PRINTING PAPER

J. Henschel, Westphalia, Hamburg, 6 cs.

International F'd'g. Co., Gaasterdyk, Rotterdam, 12 cs.

E. Dietzgen & Co., Gaasterdyk, Rotterdam, 96 cs.

Perkins Goodwin & Co., Cleveland, Hamburg, 25 cs.

Martin & Bechtold, Muenchen, Bremen, 27 cs.

Continental Typefounders Assn., Muenchen, Bremen, 23 cs.

C. Steiner, Muenchen, Bremen, 11 cs.

Keuffel & Esser Co., American Farmer, Hamburg, 44 cs.

Oxford University Press, Scythia, Liverpool, 7 cs.

Japan Paper Co., American Shipper, London, 8 cs.

PACKING PAPER

American Express Co., Westphalia, Hamburg, 87 cs.

FILTER PAPER

C. Schleicher Schull Co., Westphalia, Hamburg, 3 bls.

H. Reeve Angel & Co., Inc., American Shipper, London, 25 cs.

DRAWING PAPER

Keuffel & Esser Co., American Farmer, Hamburg, 58 cs., 8 rolls.

DECALCOMANIA PAPER

C. W. Sellers, Westphalia, Hamburg, 15 cs.

C. W. Sellers, Cleveland, Hamburg, 2 cs.

L. A. Consmiller, Cleveland, Hamburg, 9 cs.

COLORED PAPER

F. Murray Hill Co., Cleveland, Hamburg, 2 cs.

S. Gilbert, Cleveland, Hamburg, 92 cs.

TRANSPARENT GREASEPROOF PAPER

Central Hanover Bank & Trust Co., Westphalia, Hamburg, 108 cs.

Amex Co., Gaasterdyk, Rotterdam, 13 cs.

COATED PAPER

Pacific National Bank, Westphalia, Hamburg, 13 cs.

METAL COATED PAPER

Hensel, Bruckman & Lorbacher, Muenchen, Bremen, 29 cs.

BARYTA COATED PAPER

Globe Shipping Co., Muenchen, Bremen, 189 cs., 50 crates.

TISSUE PAPER

F. B. Vandergrift & Co., Scythia, Liverpool, 15 cs.

Meadows, Wye & Co., Scythia, Livrepool, 3 cs.

F. C. Strype, Schenectady, Helsingfors, 75 cs.

W. J. Byrnes, Calgaric, London, 2 cs.

BOWL PAPER

Hurley Johnson Corp., Scythia, Liverpool, 6 bls.

WRITING PAPER

Japan Paper Co., Calgaric, London, 5 cs.

Meadows, Wye & Co., Aquitania, Southampton, 1 cs.

Coenca Morrison Co., Aquitania, Southampton, 11 cs.

STENCIL PAPER, ETC.

International F'd'g. Co., Westphalia, Hamburg, 4 cs.

Arlac Dry Stencil Co., Westphalia, Hamburg, 11 cs.

COUTCHOUC PAPER

American Express Co., Westphalia, Hamburg, 12 cs.

American Express Co., Cleveland, Hamburg, 12 cs.

ENVELOPES

J. Beckhard, Muenchen, Bremen, 61 cs.

STRAW BOARD

R. Wilson Paper Corp., Gaasterdyk, Rotterdam, 215 rolls.

MISCELLANEOUS PAPER

Keller Dorian Paper Co., Sarcoxie, Havre, 21 cs.

Kensington Wallpaper Co., Westphalia, Hamburg, 7 bls.

Wilkinson Bros., Inc., Westphalia, Hamburg, 24 cs., 16 bls., 346 rolls.

J. Henschel, Westphalia, Hamburg, 2 cs.

Coenca Morrison Co., Ile de France, Havre, 12 cs.

Standard Products Corp., Ile de France, Havre, 14 cs.

L. T. Piver, Inc., Ile de France, Havre, 3 cs.

Guibout Freres, Ile de France, Havre, 3 cs.

Standard Products Corp., Ile de France, Havre, 71 s.

C. H. Boulin, Ile de France, Havre, 19 cs.

Japan Paper Co., Ile de France, Havre, 4 cs.

Keller Dorian Paper Co., Ile de France, Havre, 15 cs.

American Express Co., Ile de France, Havre, 18 cs.

RAGS, BAGGING, ETC.

International Purchasing Co., Ala Antwerp, 29 bls. bagging.

Castle & Overton, Inc., Francisco, Antwerp, 201 bls. rags.

The Barret Co., Francisco, Antwerp, 175 bls. rags.

A. W. Fenton, Inc., Francisco, Antwerp, 55 bls. rags.

Darmstadt Scott & Courtney, Francisco, Antwerp, 50 bls. flax ends.

Royal Manfg. Co., Francisco, Antwerp, 74 bls. cotton waste.

Whaling Waste Products Co., Francisco, Antwerp, 120 bls. cotton waste.

Chemical Bank & Trust Co., Francisco, Antwerp, 35 bls. flax waste.

Robert Blanw, Francisco, Antwerp, 53 bls. bagging.

New York Trust Co., Mindoro, Alexandria, 160 bls. rags.

S. Birkenstein & Son, Mindoro, Alexandria, 276 bls. rags.

Cohen & Son, Sarcoxie, Havre, 7 bls. new cuttings.

V. Galaup, Sarcoxie, Havre, 43 bls. rags.

Cohen & Son, Sarcoxie, Dunkirk, 49 bls. rags.

Intl. Germanic Trust Co., Ohio Maru, Hamburg, 83 bls. rags.

W. Steck, Ohio, Maru, Hamburg, 65 bls. rags.

Equitable Trust Co., Yaka, Odessa, 191 bls. cuttings.

Katzenstein & Keene, Inc., Extavia, Marseilles, 120 bls. rags.

J. Cohen & Son, Extavia, Marseilles, 39 bls. rags.

Banco Com'l Italiane Trust Co., Extavia, Genoa, 439 bls. bagging.

Intl. Germanic Trust Co., Gaasterdyk, Rotterdam, 129 bls. rags.

E. J. Keller Co., Inc., Gaasterdky, ——, 35 bls. rags.

Guaranty Trust Co., Cleveland, Hamburg, 19 bls. rags.

Bank of The Manhattan Co., Cleveland, Hamburg, 12 bls. rags.

Equitable Trust Co., Cleveland, Hamburg, 1013 bls. rags.

Banco Com'l. Italiane Trust Co., Cabo Villano, Leghorn, 226 bls. rags.

Fidelity Trust Co., Cabo Cillano, Naples, 84 bls. rags.

Van Oppen & Co., Muenchen, Bremen, 28 bls. thread waste.

J. A. Manning Paper Co., Muenchen, Bremen, 41 bls. rags.

Phila. National Bank, Caledonia, Glasgow, 39 bls. paper stock.

Brown Bros. & Co., Caledonia, Glasgow, 30 bls. rags.

C. R. Spence, Caledonia, Glasgow, 53 bls. rags.

E. A. Stone Co., American Farmer, Hamburg, 46 bls. rags.

V. Galaup, American Farmer, Hamburg, 18 bls. rags.

Darmstadt, Scott & Courtney, American Farmer, Hamburg, 32 bls. jute card waste.

Amtorg Trading Co., American Farmer, Hamburg, 203 bls. rags.

Castle & Overton, Inc., Siboney, Havana, 49 bls. new cuttings.

Atlas Waste Manfg. Co., Asuka Maru, Kobe, 50 bls. rags.

E. J. Keller Co., Inc., Ninian, ——, 68 bls. bagging.

OLD ROPE

International Purchasing Co., Cabo Torres, Pasages, 206 coils.

International Purchasing Co., Cabo Torres, Cadiz, 454 coils.

International Purchasing Co., Extavia, Genoa, 138 coils.

(Continued on page 76)

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Purity 99½%

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protects your rolls and insures their delivery to your customer in perfect condition. They eliminate claims for damages.

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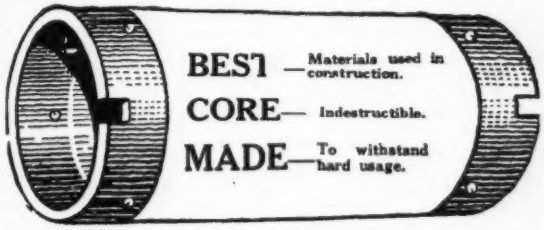

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503 Market St., San Francisco, Cal.
Sixth and Chestnut Sts., Philadelphia, Pa.

Imports of Paper and Paper Stock

(*Continued from page 74*)

J. C. van Stallie, Gaasterdyk, Rotterdam, 77 pkgs.
Brown Bros. & Co., Gaasterdyk, Rotterdam, 33 coils.
Brown Bros. & Co., Cabo Villano, Huelva, 158 coils.
Chemical Bank & Trust Co., Muenchen, Bremen, 46 bls.

CASEIN

Kalbfleisch Corp., American Legion, B. Ayres, 417 bags.
Atterbury Bros., Inc., American Legion, B. Ayres, 834 bags.

WOOD PULP

Scandinavian Pulp Agency Inc., Griesheim, Wifstavarf, 2475 bls. sulphite.
Perkins Goodwin & Co., Griesheim, Wifstavarf, 375 bls. sulphite.
Johanson Wales & Sparre, Inc., Griesheim, Soraker, 3075 bls. sulphite.
M. Gottesman & Co., Inc., Griesheim, Iggesund, 875 bls. wood pulp, 175 tons.
——, Griesheim, Hernosand, 2250 bls. sulphite, 375 tons.
——, Griesheim, Hernosand, 1950 bls. sulphate, 325 tons.
Bulkley Dunton & Co., Griesheim, ——, 1500 bls. wood pulp.
——, Westphalia, Hamburg, 1167 bls. wood pulp, 170 tons.
Bulkley Dunton & Co., Consul Olsson, ——, 15650 bls. wood pulp, 2675 tons.
J. Andersen & Co., Consul Olsson, Stugsund, 500 bls. sulphite, 100 tons.
E. M. Sergeant & Co., Consul Olsson, Hernosand, 300 bls. sulphite, 50 tons.
Castle & Overton, Inc., Cleveland, Hamburg, 767 bls. wood pulp, 115 tons.
Irving Trust Co., Muenchen, Bremen, 128 bls. sulphite.
Pagel, Horton & Co., Inc., Schenectady, Hornefors, 150 bls. sulphite.

WOOD FLOUR

Bakelite Corp., Anaconda, Rotterdam, 662 bags, 51940 ks.
B. L. Soberski, Norefjord, Frederickstad, 1500 bags.
B. L. Soberski, Gaasterdyk, Rotterdam, 2000 bags.

NORFOLK IMPORTS

WEEK ENDING JANUARY 18, 1930

Irving Trust Co., Ala, Antwerp, 139 bls. bagging.
E. Butterworth & Co., Inc., Ala, Antwerp, 134 bls. bagging.
Darmstadt, Scott & Courtney, Ala, Antwerp, 131 bls. rags.
Bank of New York, Ala, Antwerp, 191 bls. bagging.
British American Tobacco Co., Ala, Antwerp, 51 cs. printed cigarette wrappers.
E. J. Keller Co., Inc., Bilderdky, ——, 37 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 18, 1930

Congoleum Nairn Co., Ala, Antwerp, 73 bls. rags.
W. Steck, Ala, Antwerp, 212 bls. jute card waste.
——, Griesheim, Hernosand, 7060 bls. wood pulp.
Bulkley, Dunton & Co., Griesheim, ——, 4375 bls. wood pulp, 875 tons.
M. Gottesman & Co., Inc., Griesheim, Iggesund, 4500 bls. wood pulp, 900 tons.
Pagel, Horton & Co., Inc., Schenectady, Honrefors, 10050 bls. sulphite.
Pagel, Horton & Co.,Inc., Schenectady, Husum, 10800 bls. sulphate, 1828 tons.
Pagel, Horton & Co., Inc., Schenectady, Domsjo, 150 bls. sulphite, 25 tons.

BOSTON IMPORTS

WEEK ENDING JANUARY 18, 1930

Sherwin Sheppard Co., Francisco, Hull, 10 bls. rags.
Wellesley Woolen Co., Francisco, Hull, 13 bls. rags.
Brown Bros. & Co., Francisco, Hull, 155 coils old rope.
Stone Forsyth Co., Francisco, Antwerp, 50 bls. bagging.
H. J. Fawcett, Francisco, Antwerp, 151 bls. flax waste.
Meredith Linen Mills, Francisco, Antwerp, 132 bls. flax waste.
Spaulding Fibre Co., Francisco, Antwerp, 973 bls. flax waste.
Castle & Overton, Inc., Anaconda, Rotterdam, 3240 bls. wood pulp, 514 tons; 51 bls. rags.
Irving Trust Co., Anaconda, Rotterdam, 54 bls. rags.
Brown Bros. & Co., Anaconda, Rotterdam, 113 bls., 33 coils old rope.
J. C. van Stallie, Anaconda, Rotterdam, 63 coils old rope.
Darnstadt, Scott & Courtney, Extavia, Genoa, 91 bags old pickers.

PORTLAND IMPORTS

WEEK ENDING JANUARY 18, 1930

J. Andersen & Co., Consul Olsson, Hernosand, 4800 bls. sulphite, 950 tons.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 18, 1930

National City Bank, Clara Venice, 89 bls. rags.
National City Bank, Clara Trieste, 384 bls. rags.
Fidelity Trust Co., Clara Bari, 183 bls. rags.
Brown Bros. & Co., Clara Bari, 223 bls. rags.
Bank of New York, Cabo Torres, Pasages, 185 bls. rags.
Castle & Overton, Inc., Sarcoxie, Havre, 334 bls. rags.
Katzenstein & Keene, Inc., Sarcoxie, Havre, 128 bls. rags, 150 bls. bagging.
E. J. Keller Co., Inc., Sarcoxie, ——, 50 bls. rags.
Castle & Overton, Inc., Sarcoxie, Dunkirk, 152 bls. rags.
G. Mathes Co., Sarcoxie, Dunkirk, 79 bls. rags.
Wiping Material Co., Sarcoxie, Dunkirk, 74 bls. rags.
Union Waste Co., Sarcoxie, Dunkirk, 72 bls. rags.
J. M. Hagy Waste Co., Sarcoxie, Dunkirk, 73 bls. rags.
Katzenstein & Keene, Inc., Sarcoxie, Dunkirk, 1039 bls. rags.
Amtorg Trading Corp., Yaka, Odessa, 152 bls. rags.
Equitable Trust Co., Yaka, Odessa, 402 bls. rags.
E. M. Sergeant & Co., Norefjord, Oslo, 600 bls. wood pulp.
Perkins, Goodwin & Co., Norefjord, Oslo, 250 bls. wood pulp.
National City Bank, Norefjord, Oslo, 1200 bls. wood pulp.
——, Norefjord, Oslo, 37 rolls news print.
Chemical Bank & Trust Co., Norefjord, Tofte, 5100 bls. sulphite.
J. Andersen & Co., Norefjord, Sarpsborg, 1500 bls. sulphite.
Katzenstein & Keene, Inc., Extavia, Marseilles, 88 bls. rags.
Guaranty Trust Co., Extavia, Genoa, 273 bls. rags.
F. Weber & Co., Extavia, Genoa, 10 cs. printing paper.
V. Galaup, Extavia, Leghorn, 267 bls. rags.
Guaranty Trust Co., Extavia, Leghorn, 164 bls. rags.
V. Galaup, Extavia, Naples, 45 bls. rags.
Fidelity Trust Co., Cabo Villano, Naples,40 bls. rags.
Banco Com'l Italiane Trust Co., Cabo Villano, Naples, 117 bls. rags.
Banco Com'l Italiane Trust Co., Cabo Villano, Leghorn, 96 bls. rags.
E. J. Keller Co., Inc., Tomalva, ——, 295 bls. rags.
E. J. Keller Co., Inc., West Eldara, ——, 62 bls. rags.

Stewart Outlines Forestry Policy

Canada requires a definite forest policy to conserve resources, regulate the cutting of timber and pulpwood, promote settlement of the land and encourage greater effort to prevent forest fires, declared the Hon. Charles Stewart, speaking at the annual convention of the Canadian Lumbermen's Association in Ottawa this week. "To my mind," Mr. Stewart said, "there is nothing difficult or obstruse about the essentials of a proper forest policy, nor can there be anything antagonistic to the lumberman, the pulpwood operator or any other forest user." The trouble had been, he pointed out, that in the past the producing power of the soil had been entirely disregarded. "The lumber industry has been characterized by its treatment of the forest as a mine to be worked out and abandoned, following which the industry migrated to new sources of supply. Such migrations must now be considered as at an end. It is now face to face with the fact that the major forest regions have been or are in the process of being worked over. As a result the pulp and paper industry is today in severe competition for the tree species of principal economic importance at this time, namely, spruce. The operations of the lumber industry, together with the ravages of forest fires, have reduced large areas formerly of high value to barren waste. My point is that we have ill-treated these lands, and now have on our hands in many parts of the country areas of idle land, non-revenue producing and a burden to the communities in which they exist." The question is intimately tied up with settlement of lands, the Minister pointed out. Permanent settlement could be effected only under conditions wherein the full resources of a region, both as regard agriculture and forestry, were conserved to the highest extent. In some regions, during the early stage of development, the farmer could not live off agriculture alone. If he could obtain winter work in the woods the combination provided reasonable means of livelihood. As a forest policy should tie in with the proper direction of land development, the first step in the evolution of such policy must be proper land classification. Lands suitable for agriculture and lands suitable for forestry should be defined and the relation between them organized. With this in view there should be an inventory of resources.

May Build Finnish Plant

A press dispatch to the *New York Times* from Helsingfors says:—Edward Backus, president of Backus Brooks Company, during the last few days has visited the leading Finnish woodworking firms to study the possibility of erecting a large wallboard factory in Finland with an estimated annual output of 36,000 tons. He was accompanied by Mr. Powrie, export manager of the Minnesota and Ontario Paper Company, the National Pole and Treating Company and the Insulite Company, for which Backus Brooks is the holding company.

Mr. Backus investigated chiefly the raw materials and power supply of Finland. He is now returning to the United States.

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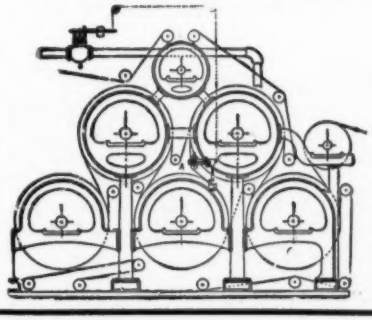

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will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 22, 1930.

Trading in the local paper market was rather light during the past week. Sales forces of the leading paper houses, however, have started a strenuous campaign for orders, and are looking for general improvement in the situation in the near future. While recently quoted prices are being maintained, in most instances, keen competition for desirable orders is reported to have resulted in some slight concessions.

The news print situation is practically unchanged. Statistics gathered by the News Print Service Bureau show that the total output in North America during 1929 was 4,395,288 tons, of which 2,728,827 tons were made in Canada, 1,392,276 tons in the United States, 255,500 tons in Newfoundland, and 18,680 in Mexico. Stocks of news print paper at the mills are below normal.

Conditions in the paper board market continue unsatisfactory. Although production and orders of box board have increased materially of late, prices remain weak. No radical changes were reported in the fine paper market. The coarse paper market is spotty. Overproduction of kraft paper has resulted in some price cutting. It is said that considerable tonnage of Southern kraft has been sold at from $10 to $15 per ton below the official schedule.

Mechanical Pulp

The ground wood market is exhibiting a strong undertone. Offerings of both domestic and imported grades of mechanical pulp are decidedly limited, due mainly to curtailed production at home and abroad. The contract movement is well up to average. Prices are generally steady to firm and shading is infrequent.

Chemical Pulp

Most of the business transacted m the chemical pulp market of late has been along routine lines. Strong unbleached and easy bleaching sulphite grades are well sold ahead, while other grades are fairly active for the time of year. With the closing of navigation on the Baltic at hand, imports have been heavy. Prices remain unaltered, in most instances.

Old Rope and Bagging

The old rope market was moderately active during the past week. Both imported and domestic manila rope were in fair request. Mixed rope continues to move at a steady pace. The bagging market is fairly busy at present, with the mills displaying more interest in both scrap and gunny. Prices remain unchanged.

Rags

Some improvement was noticed in the domestic rag market. Cotton cuttings are moving into consumption in satisfactory volume. No. 1 roofing rags are in moderate request. Offerings of mixed rags are limited. Prices remain unaltered. The foreign rag market is rather quiet. Prices abroad are still considered too high.

Waste Paper

The higher grades of paper stock continue steady. Soft white shavings, book stock, ledgers and writings, are in good demand for the season. Prices are steady and unchanged. Board mill interest in the lower grades is almost lifeless at present, although it is expected that the market will become more lively in the near future when the mills require to replenish their stocks.

Twine

Steadiness prevails in the local twine market. Offerings of the various grades are about sufficient to take care of prevailing requirements. Supplies are moving into consumption in normal volume. Prices are generally holding to schedule and there is little talk of concessions around.

National Waste Review

The first number of the *National Waste Review*, a new monthly periodical published by the Trade Promotion Bureau of the National Association of Waste Material Dealers, Inc., and devoted to the interests of dealers, producers and consumers of waste material, has just been issued.

In addition to many special articles by leaders in the industry, the *National Waste Review* contains several regular features, including market reviews, traffic information, and a salvage and reclamation section.

The new magazine is published at the Times Building, New York, and should prove a valuable medium for presenting the news of the association and its aims to dealers, consumers and producers of waste material throughout the world.

Rochester Paper Co. Installs Trimmer

ROCHESTER, Mich., January 14, 1930.—The Rochester Paper Company, manufacturers of the well known Indian brands of blotting have recently installed a new 74 inch Seybold trimmer. These well known brands of blotting paper are distributed by leading paper jobbers in practically every state in the union.

For the convenience of the Eastern paper jobbers this company maintains an office at 350 Broadway, telephone Walker 9388. This office is in charge of J. G. Turner, who is well known among the Eastern paper dealers.

A Western sales office is maintained in San Francisco and is in charge of H. M. Gimlin, 265 San Leandro Way, San Francisco

Austin Co. Gets Contract for New Bag Plant

WELLSBURG, W. Va., January 20, 1930.—W. H. Perry, president of the Harvey Paper Mills Company, announces the award of a contract to the Austin Company, engineers and builders, with headquarters at Cleveland, for design and construction of a new paper bag plant at Wellsburg, W. Va. The new unit will be of brick and steel frame construction, one story and basement, 94 by 240 feet. The Harvey Paper Mills Company is a subsidiary of the Pillsbury Flour Company, Minneapolis, and manufactures paper bags for the flour mill.

News Print Service Bureau to Meet

The annual meeting of the News Print Service Bureau will be held on Friday, January 31, at the Ritz-Carlton Hotel in Montreal. The matters to be considered include reports upon news print production and consumption in 1929, prospect for 1930, election of officers and other subjects of interest to the industry. The meeting will begin with a luncheon at 1.00 o'clock (immediately following the annual meeting of the Canadian Pulp and Paper Association) so that there will be more time than on previous occasions for discussion of matters of interest.

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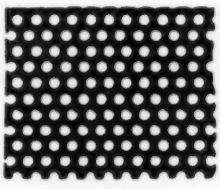
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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, January 22, 1930

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Demand for both the pulp and the powder is seasonal. The pulp is quoted at from $42.00 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. Contract shipments are moving to the paper mills in fair volume. Prices are generally holding to peviously quoted levels. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—There were no radical changes in the casein market. Domestic casein is still quoted at from 14½ cents to 15½ cents per pound. Argentine standard ground is selling at from 14½ cents to 15 cents and finely ground at from 15 cents to 15½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Supplies of caustic soda are moving into consumption in satisfactory volume. Prices are generally holding to schedule. Solid caustic soda is quoted at from $2.90 to $2.95, and the flake and the ground at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Some improvement was noticed in the demand for china clay. The contract movement is satisfactory. Prices are steady and unchanged. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—The chlorine market was moderately active during the past week. Shipments against contract are moving in seasonal volume. No further price changes have been reported. Chlorine is quoted at $2.50 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—Conditions in the rosin market were irregular. Prices were easier. The grades of gum rosin used in the paper mills are now quoted at from $8.40 to $8.50 per 280 pounds, in barrels, on dock. Wood rosin sells at $6.70 to $7.85 per 280 pounds.

SALT CAKE.—The salt cake market is very firm at present. Demand from the mills is persistent but offerings are decidedly scarce. Recently advanced prices are being maintained. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—Trading in the soda ash market was moderately active. Supplies are moving into consumption in fair volume. Prices are generally holding to schedule and there is little talk of concessions around. Contract quotations, in car lots, at works, are: in bags, $1.32½, and in barrels, $1.55.

STARCH.—The starch market is exhibiting a strong undertone. Demand from the mills is satisfactory for the time of year. Prices are holding to previously quoted levels without difficulty. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $4.09 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Offerings of sulphate of alumina are sufficient to take care of current requirements. The contract movement is well up to average. Prices are unchanged. Commercial grades are quoted at from $1.40 to $1.55, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Consumption of sulphur is being maintained in good volume. Sulphur is quoted at $18 per ton, at mine, for 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over the same period. On spot and near by car loads, the quotation is still $21 per ton.

TALC.—Most of the business transacted in the talc market was along routine lines. The contract movement is normal. Prices remain unchanged. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.00	@ 5.50
Southern	4.45	@ 4.70
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00	@ —
Rolls, spot	62.00	@ —
Sheets	67.00	@ —
Side Runs	47.00	@52.00
Boards—per ton—		
News	37.50	@40.00
Straw	52.50	@55.00
Chip	35.00	@37.50
Binders' Boards	65.00	@70.00
Wood Pulp	80.00	@85.00
65 Test Jute Liner	45.00	@47.50
85 Test Jute Liner	50.00	@55.00
Sgl. Mla. Lt. Chip	47.50	@50.00

Mechanical Pulp

(On Dock)

No. 1 Imported—		
Moist	30.00	@32.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	28.00	@32.00
Screenings	15.00	@20.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.40	@ 4.25
Easy Bleaching	2.90	@ 3.15
No. 1 strong unbleached	2.75	@ 3.00
Mitscherlich unbleached	2.80	@ 3.25
No. 2 strong unbleached	2.40	@ 2.60
No. 1 Kraft	2.35	@ 2.50
No. 2 Kraft	2.30	@ 2.40
Sulphate—		
Bleached	3.40	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.20	@ 4.75
Easy Bleaching Sulphite	2.65	@ 3.00
News Sulphite	2.50	@ 2.70
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.10	@ 3.30
Soda Bleached	3.10	@ 3.25
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.65	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	9.50	@10.50
New White, No. 2	7.50	@ 8.00
Silesias No. 1	7.50	@ 8.00
New Unbleached	10.50	@11.00
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Blue Overall	7.25	@ 7.75
Washables	4.75	@ 5.25
Fancy	5.50	@ 6.00
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.15	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.90	@ 1.00

Foreign Rags

New Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.00	@10.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50

Old Rags

No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.75	@ 6.75
No. 3 White Linens	4.75	@ 5.25
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	2.00	@ 2.10
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.95	@ 2.10
Dutch Blue Cottons	2.20	@ 2.35
French Blue Linens	2.75	@ 2.85
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.10	@ 2.20
Checks and Blues	1.85	@ 2.00
Lindsey Garments	1.85	@ 1.95
Dark Cottons	1.55	@ 1.60
Old Shopperies	1.50	@ 1.55
New Shopperies	1.50	@ 1.55
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.50	@ 1.60
Domestic	1.60	@ 1.70
Wool Tares, light	1.60	@ 1.65
Wool Tares, Heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	4.25	@ 4.50
Domestic	4.75	@ 5.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.00	@ 3.25
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.40	@ 2.55
White envelope cuttings	2.90	@ 3.10
Flat Stock—		
Stitchless	1.45	@ 1.55
Overissue Mag.	1.45	@ 1.55
Solid Flat Book	1.40	@ 1.50
Crumpled No. 1	1.00	@ 1.10
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.40	@ 1.50
New B. B. Chips	.45	@ .55
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.50	@ 1.75
Extra No. 1 old	1.25	@ 1.35
Print	.60	@ .65
Container	.40	@ .50
Bogus Wrapper	.60	@ .65
Old Kraft Machine Compressed bales	1.65	@ 1.75
News—		
No. 1 White News	1.65	@ 1.75
Strictly Overissue	.55	@ .65
Strictly Folded	.45	@ .55
No. 1 Mixed Paper	.25	@ .30
Common Paper	.15	@ .20

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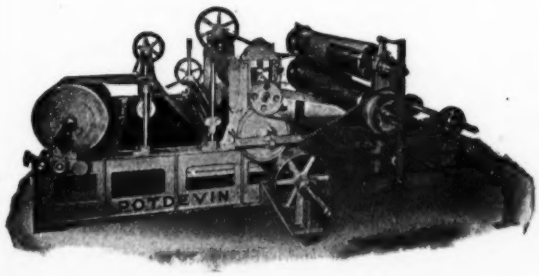

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Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	4.25	@	4.50
No. 2 Kraft	.04	@	.04¾
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.40
White Env. Cuttings	2.60	@	2.65
No. 1 Soft Shavings	2.10	@	2.15
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.50	@	.60
Ledger & Writings	1.25	@	1.35
Solid Books	1.05	@	1.10
Blanks	1.60	@	1.65
Krafts	1.65	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.75	@	1.80
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.60	@	.70
Folded News (over-issue	.60	@	.65
Old Newspapers—			
No. 1	.60	@	.65
No. 2	.50	@	.55
Mixed Papers—			
No. 1	.40	@	.50
Roonng Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	37.50	@	40.00
Chip Board	35.00	@	47.50
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.80	@	1.90
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.40	@	1.50
No. 2 Books, light	1.05	@	1.15
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.60	@	.65
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.80	@	.85
Old Newspaper	.50	@	.55

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75
Repacked	.01¾	@	.02
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.04½	@	.05½
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	50.00	@	—
Single White, Patent Coated Newsboard			
Bender	65.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.60	@	1.70
Old Kraft	.165	@	1.85
Print Manila	.80	@	.90
No. 1 Mixed Paper	.30	@	.35
Overissue News	.45	@	.55
Old Newspapers	.45	@	.50
Box Board, Chip	.45	@	.50

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.40	@	1.50
Manila Rope—			
Foreign	4.25	@	4.40
Domestic	—	@	4.50
Transmission Rope	—	@	2.75
Mixed Strings	.90	@	1.00
Jute Wool Strings	1.00	@	1.05
Jute Carpet Threads	1.05	@	1.15
Scrap Burlaps	—	@	1.35
Scrap Sisal	1.80	@	2.00
Scrap Sisal for shredding	2.25	@	2.50
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	3.00	@	3.12½

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06¼
New Unbleached	.10	@	.10½
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¾
Khaki Cuttings	.04	@	.04¾
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03¼
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.50	@	1.55
New No. 1 Shirt Cuttings	9.00	@	9.50
Dutch Blues	2.00	@	2.12½
Lace Curtains	4.75	@	5.00
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	2.00
Old Linsey Garments	1.85	@	1.90

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00		—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

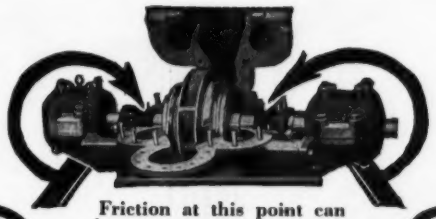
Ground Wood	31.00	@	32.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	78.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09¾	@	.10
Fancy Shirt Cuttings	.06	@	.06¼



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ESTABLISHED 1872

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